IMPOSTOR FEARS: SOME HYPOTHESISED ANTECEDENTS AND CONSEQUENCES

by

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ABSTRACT

The Impostor Phenomenon was identified from clinical observations during therapeutic sessions with high achieving women by Dr Pauline Clance. Despite objective evidence of success, these women had a pervasive psychological experience, believing that they were intellectual frauds and feared being recognised as impostors. They suffered from anxiety, fear of failure and dissatisfaction with life. Previous research has suggested that family achievement values and perfectionism may lead to the related trait, Impostorism.

This thesis examined the contributions of mixed messages about achievement from family and perfectionism as hypothesised antecedents of Impostorism and coping styles and psychological distress (measured by anxiety, somatisation, and depression) as hypothesised consequences. Complete data was obtained from 354 students from the University of Tasmania. Participants completed the Mixed Messages about Achievement from Family Scale (MMAS), the Multidimensional Perfectionism Scale, the Clance Impostor Phenomenon Scale (CIPS), the Coping Inventory for Stressful Situations, and the Anxiety, Somatisation, and Depression subscales of the Symptom Checklist-90-Revised. Exploratory Factor Analysis was used to refine the MMAS and the CIPS.

Structural Equation Modelling was used to test the hypothesised antecedents and consequences models of Impostorism. The analyses for antecedents of Impostorism found that MMAS and Socially Prescribed Perfectionism were moderately correlated with Impostorism, while Self-Oriented Perfectionism was less related. Other-Oriented Perfectionism had little

relationship with Impostorism, suggesting Impostorism relates to specific types of perfectionism rather than general perfectionism. The final Antecedents model of Impostorism, including Mixed Messages from Family, Socially Prescribed Perfectionism, and Self-Oriented Perfectionism, was a good fit and accounted for 46% of the variance in Impostorism.

The analysis of consequences of Impostorism found that Emotion-Focussed Coping was most strongly correlated with Impostorism, with the other coping styles negligibly related. Anxiety, Somatisation, and Depression were also correlated with Impostorism and treated as indices of Psychological Distress. The final Consequences model of Impostorism, including Emotion-Focussed Coping largely mediating the prediction of Psychological Distress, was a reasonable fit and could account for 40% of the variance in Psychological Distress.

The Antecedents and Consequences model of Impostorism were combined and generated two alternative models. In Model 1 Impostorism entirely mediated the relationship between hypothesied antecedents and consequences. In Model 2 Emotion-Focussed Coping fully mediated the relationship between Impostorism and Psychological Distress if a path from Socially Prescribed Perfectionism to Emotion-Focussed Coping was allowed.

Overall, the findings suggested that Impostorism is a valuable construct, possibly mediating the relationship between self-imposed and socially attributed perfectionism and psychological distress, as well as suggesting that emotion-focussed coping may be a critical consequence of Impostorism leading to Psychological Distress.

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DEDICATIONS

For my grandmother, Sumit Sakulku

and

In loving memory of my grandmother, Eang Hengtakul

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CHAPTER 1

Introduction

The "Impostor Phenomenon" was first described by Dr Pauline Clance, from her observations in a clinical setting (Clance, 1985). Individuals with the Impostor Phenomenon experience intense feelings that their achievements are undeserved and worry that they are likely to be exposed as a fraud. This causes distress and maladaptive behaviour (e.g. Clance, 1985; Harvey & Katz, 1985; Kolligian & Sternberg, 1991; Sonnak & Towell, 2001). Feeling like an impostor seems to be widely experienced. It is estimated that 70% of people will experience at least one episode of this Impostor Phenomenon in their lives (Gravois, 2007). Most subsequent research in this area has examined the Impostor Phenomenon as a personality trait or disposition, with samples taken from professionals and students (e.g., Sonnak & Towell, 2001; Topping, 1983).

The term Impostor Phenomenon was originally derived from clinical observation of female clients in therapeutic sessions, and most of the preliminary work in this area was based on clinical populations. However, this thesis is based on participants, sampled from a non-clinical population with a full range of self-perceived intellectual fraudulence, from absent to severe levels. To avoid confusion, it seems more appropriate to reserve the term Impostor Phenomenon for the small subgroup of people who experience a clinical level of self-perceived intellectual fraudulence. The terms *Impostorism* and *impostor fears* (Thompson,

Davis, & Davidson, 1998; Thompson, Foreman, & Martin, 2000) are used in this thesis to describe the psychological experience of individuals who perceive themselves as intellectual frauds and also fear being exposed as impostors. The term *Impostor* when capitalised in this thesis refers to a person who experiences impostor fears.

Researchers have identified a number of factors contributing to the emergence of Impostorism, including perfectionism (Clance, 1985; Thompson et al., 1998; Thompson et al., 2000; Ferrari & Thompson, 2006) and family environment (e.g., Bussotti, 1990; Clance, 1985; King & Cooley, 1995; Sonnak & Towell, 2001). Links between Impostorism and psychological distress, such as anxiety and depression have been well established (e.g., Chrisman, Pieper, Clance, Holland, & Glickauf-Hughes, 1995; Henning, Ey, & Shaw, 1998; Topping, 1983). Most Impostors are able to fulfill their academic or work requirements despite their self-perceived fraudulence. It is possible that subclinical symptoms resulting from impostor fears can, if prolonged, lead to clinical levels of depression or anxiety. A greater understanding of the factors contributing to Impostorism and its consequences may lead to effective interventions that reduce psychological distress.

The aim of this thesis is to examine trait Impostorism in a university student population. Hypothesised antecedents, such as perfectionism and family achievement environment, are considered, as well as and whether coping styles mediate psychological distress as a hypothesised consequence of Impostorism.

1.1 The Impostor Phenomenon

Clance and Imes (1978) observed similarities in the feelings of intellectual fraudulence of 150 female clients during individual psychotherapy sessions. These female clients presented with varied general complaints such as anxiety symptoms, depressed moods, fear of failure, guilt about success, frustration, lack of self-confidence, and overall dissatisfaction with their lives. Clance and Imes documented these observations and introduced the term 'Impostor Phenomenon' to describe an internal experience of intellectual phoniness (Clance, 1985) commonly experienced by some of high achieving female clients (Clance, 1985; Clance & Imes, 1978; Clance & O'Tooley, 1988; Matthews & Clance, 1985). Despite being highly successful with objective evidence of success in the form of academic or professional achievement, these women repeatedly felt unsuccessful and believed that other people overrated their success and level of competence (Clance & Imes, 1978; Matthews & Clance, 1985). These women dismissed positive feedback about their ability and performance. Rather, they attributed their success to external factors such as luck, fate, good interpersonal skills, effort, aspects of their self-presentation, having a good social network, and being in the right place at the right time (Clance & Imes, 1978; Clance & O'Tooley, 1988). These women believed that they had fooled those around them and were very worried that any failure would result in exposing their self-perceived incompetence. These beliefs lead to fears about not being able to maintain their high level of performance. These fears were so intense and persistent that they suffered a high level of anxiety about being recognised as an impostor and not as truly capable or intelligent (Clance, 1985).

Initially, the Impostor Phenomenon was believed to only affect professional women (Clance & Imes, 1978). However, subsequent research has shown Impostorism affects a wide range of people. For example, Impostorism has been observed to affect both genders (e.g., Bussotti, 1990; Langford, 1990; Topping, 1983), and to occur in people with different occupations such as college students (Bussotti, 1990; Harvey, 1981; Langford, 1990), academics (Topping, 1983), medical students (Henning et al., 1998), and marketing managers (Fried-Buchalter, 1992). Chae, Piedmont, Estadt, and Wicks (1995) and Clance, Dingman, Reviere, and Stober (1995) found Impostorism occurred across different cultures. Harvey (1981) asserted that anyone can view themselves as an impostor if they fail to internalise their success and this experience is not limited to people who are highly successful.

1.1.1 Definition of the Imposter Phenomenon by Clance

The definition of the Impostor Phenomenon from Clance (1985) refers to an "internal experience of intellectual phoniness" (Matthews & Clance, 1985, p. 71) in individuals who are highly successful but unable to internalise their success (Bernard, Dollinger, & Ramaniah, 2002; Clance & Imes, 1978). Clance believed that the Impostor Phenomenon is not "a pathological disease that is inherently self-damaging or self-destructive" (Clance, 1985, p. 23), rather, it interferes with the psychological well-being of a person. A high level of Impostor Phenomenon limits the acceptance of success as an outcome of one's own ability and influences feelings of self-doubt and anxiety. Clance (1985) suggested that the Impostor Phenomenon is marked by six potential characteristics: 1) The Impostor Cycle; 2) The need to be special or to be the very best; 3) Superman/Superwoman aspects; 4) Fear of failure; 5) Denial of competence and Discounting praise; and 6) Fear

and guilt about success. However, the existence of these characteristics in Impostors is varied. Not every Impostor has all these characteristics but to consider someone as an Impostor, a minimum of two characteristics should be found. These six characteristics are explained in the following section.

1.1.1.1 The Impostor Cycle

The Impostor Cycle is illustrated in Figure 1.1.

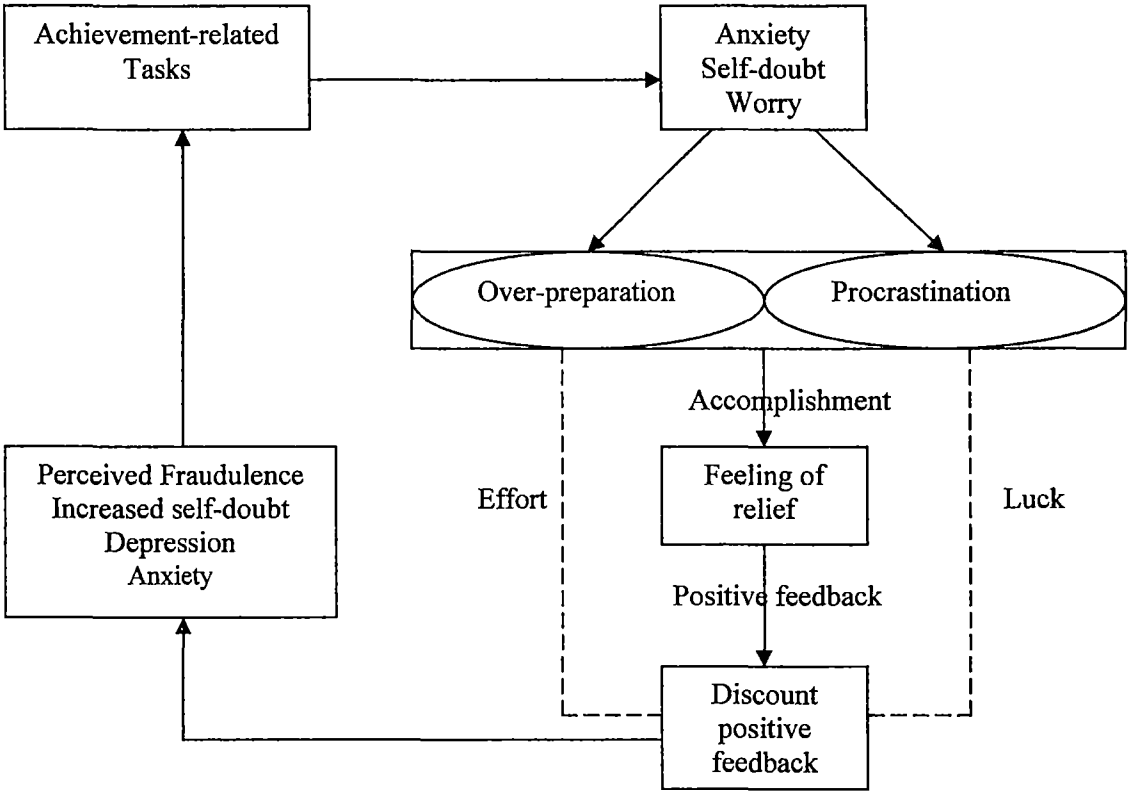


Figure 1.1 Diagram illustrating the Impostor Cycle based on Clance (1985). The cycle begins with the assignment of achievement related tasks.

The Impostor Cycle is one of the most important characteristics of the Impostor Phenomenon (Clance, 1985). The Impostor Cycle starts when an achievement-related task, such as school work or vocational task is assigned. Individuals with trait impostor fears are bothered by anxiety-related symptoms

(e.g., Chrisman et al., 1995; Clance & Imes, 1978; Thompson et al., 2000). They may react to this anxiety either by extreme over-preparation, or initial procrastination followed by frenzied preparation (Thompson et al., 2000). Following task completion, there is an initial sense of relief and accomplishment, but those good feelings do not persist. Although Impostors may receive positive feedback about their successful accomplishment of the task, Impostors deny their success is related to their own ability. They reject positive messages about their personal contribution because those messages are incongruent with their perception of their mechanics of success (Casselman, 1991). If Impostors have over-prepared, they believe that their success is due to hard work. Those who initially procrastinate, likely attribute their success to luck. Impostors also hold fixed beliefs that accomplishment through hard work does not reflect true or real ability (Clance, 1985). The combination of Impostors' beliefs about the mechanics of success and their perceptions of the key contribution of effort or luck influencing their success on a particular task reinforces the Impostor Cycle. When facing a new achievement-related task, self-doubt creates a high level of anxiety, and the Impostor Cycle is repeated.

Overworking is one observed and self-perceived pattern of the Impostor Cycle. Overworking becomes problematic when the amount of effort and energy invested in a task exceeds that for producing work of reasonable quality (Clance, 1985), and interferes with other priorities. Even though individuals with impostor fears recognise this overworking pattern, they often find it difficult to break this cycle. Clance (1985) observed that Impostors often have strong beliefs that they will become a failure if they do not follow the same working style.

Another complication is that repetition of success reinforces the feeling of fraudulence instead of weakening the links of the Impostor Cycle (Clance & Imes, 1978). Clance (1985) has suggested that Impostors have high expectation for their goals and have their own concept of ideal success. Impostors disregard their success if there is any gap between their actual performance and their ideal standard, which contributes to discounting of positive feedback. Since Impostors are high achievers who also "make unreasonably low assessments of their performance" (Want & Kleitman, 2006, p. 969), the repetitions of success emphasise the discrepancy between their actual and ideal standards of success as well as strengthening the feeling of being a fraud or an impostor.

1.1.1.2 The need to be special, to be the very best

Impostors often secretly harbour the need to be the very best compared with their peers. Clance (1985) observed that Impostors have often been in the top of the class throughout their school years. However, in a larger setting, such as in a university, Impostors realise that there are many exceptional people and their own talents and abilities are not atypical. As a result, Impostors often dismiss their own talents and conclude that they are stupid when they are not the very best.

1.1.1.3 Superwoman/Superman aspects

Clance (1985) asserted that "the need to be the very best" and "the superman/superwomen aspects" are inter-related. This characteristic of the Impostor Phenomenon refers to a perfectionistic tendency. Impostors expect to do everything flawlessly in every aspect of their lives. They set high and almost impossible standards as their goals and for their self-evaluation (Imes & Clance, 1984). Impostors often feel overwhelmed, disappointed, and overgeneralise themselves as failures when they are unable to fulfill their perfectionistic goals (Clance, 1985).

1.1.1.4 Fear of failure

Impostors experience high levels of anxiety when exposed to an achievement-related task because they fear possible failure. For Impostors making mistakes and not performing at the highest standard precipitates feelings of shame and humiliation (Clance, 1985). Clance and O'Toole (1988) asserted that fear of failure is an underlying motive of most Impostors. Therefore, to reduce the risk of possible failure, Impostors tend to overwork to be certain that they will not fail (Clance, 1985).

1.1.1.5 Denial of competence and discounting praise

Impostors have difficulty internalising their success and accepting praise as valid. Impostors attribute their success to external factors to a greater degree than non-Impostors (Chae et al., 1995; Harvey, 1981; Thompson et al., 1998; Topping & Kimmel, 1985). They not only discount positive feedback and objective evidence of success but also focus on evidence or develop arguments to prove that they do not deserve praise or credit for particular achievements (Clance, 1985). The Impostor Phenomenon is not a display of false modesty rather Impostors genuinely believe that they are not as competent as other people believe them to be (Clance, 1985).

1.1.1.6 Fear and guilt about success

Fear and guilt about success in Impostors is related to the negative consequences of their success. For example, when their successes are unusual in their family or their peers, Impostors often feel less connected and more distant. They are overwhelmed by guilt about being different (Clance, 1985) and worry about being rejected by others.

Apart from having a fear of atypical success leading to rejection, Impostors are also frightened that their success may lead to higher demands and greater expectations from people around them. Impostors feel uncertain about their ability to maintain their current level of performance and are reluctant to accept additional responsibility (Clance, 1985). They worry that higher demands or expectations may reveal their intellectual phoniness.

1.1.2 Definition of Impostorism by Harvey and Katz

Harvey and Katz use the term the Impostor Phenomenon to describe "a psychological pattern rooted in intense, concealed feelings of fraudulence when faced with achievement tasks" (in Hellman & Caselman, 2004, p. 161). Harvey and Katz proposed that the Impostor Phenomenon consisted of 3 core factors: 1) the belief that he/she has fooled other people, 2) fear of being exposed as an impostor, and 3) inability to attribute own achievement to internal qualities such as ability, intelligence, or skills. According to Harvey and Katz's (1985) definition, all three criteria must be met in order to consider someone an Impostor. This definition is more specific than Clance's conceptualisation (1985). The Harvey Impostor Phenomenon scale (HIPS) is a measure of Impostorism derived from this conceptualisation. The HIPS is considered in more detail later in this thesis.

1.1.3 Definition of Impostorism as Perceived Fraudulence

Kolligian and Sternberg (1991) suggested using the term Perceived Fraudulence to describe the Impostor Phenomenon introduced by Clance (1985) to avoid confusion between those who experienced the Impostor Phenomenon as an unjustified fear and the normal meaning of 'impostor' as a fraud. In addition, Kolligian and Sternberg asserted that Impostorism is a self-perception of

fraudulence, which is a combination of cognitive and affective components, rather than an emotional disorder (Kolligan & Sternberg, 1991; Leary, Patton, Orlando, & Funk, 2000). The term Impostor Phenomenon could be easily misinterpreted because the term suggests that "the experience should be viewed as a pervasive mental illness or categorical personality disorder" (Kolligian & Sternberg, 1991, p. 308).

The concepts of the Impostor Phenomenon by Clance (1985) and Perceived Fraudulence by Kolligian and Sternberg (1991) share a similar constellation of factors such as fraudulent ideation, self-criticism, achievement pressures, and negative emotions. However, the concept of Perceived Fraudulence further emphasises a vigilant practice of impression management and self-monitoring in Impostors, who are concerned about their self-worth and social image (Kolligian & Sternberg, 1991).

1.1.4 Definition of Neurotic Imposture

More recently, Manfred Kets de Vries (2005) introduced a broader concept to include the Impostor Phenomenon. Kets de Vries proposed that Imposture in a wider sense could be recognised as a normal aspect of social behaviour, in that people are expected to conceal their weaknesses within socially accepted limits. Their imposture is a part of a continuum with two extremes outside accepted limits. One extreme is designated real imposture, while the other is Neurotic Imposture.

From Kets de Vries's (2005) definition, anyone can be an impostor when they display a façade or present a public self that is different from their private self, in order to meet social expectations. Imposture becomes problematic when a person behaves outside acceptable limits. Real impostors take on a false identity

to deceive others; they are presumably satisfied if they succeed in creating a false positive impression, but the degree of misrepresentation would be considered unacceptable if detected, and they may have a realistic fear of being exposed. For Neurotic Impostors, the problem lies with their subjective experience of fraudulence and not with realistic social unacceptability. Kets de Vries's conceptualised Imposture as a phenomenological continuum. At one extreme is the true impostor, who deliberately deceives others by assuming multiple identities, while another extreme end is the self-perceived impostor, who feels inauthentic regardless of the views of objective observers. The characteristics of Neurotic Imposture from Kets de Vries' concept include fear of failure or success, perfectionism, procrastination, and a workaholic personality, all of which correspond to the characteristics of Impostorism as described by Clance (1985).

In summary, despite some differences in definitions, Impostorism refers to a pervasive psychological experience of a person, believing that they are a self-perceived intellectual fraud and fearing they may be recognised as an impostor.

1.1.5 Measurements of Impostorism

It is possible that the definition and concept used by Clance may be biased in its initial formulation because the fundamental work on Impostorism was largely based on clinical observations from therapeutic sessions with a specific group of high-achieving women (Holmes, Kertay, Adamson, Holland, & Clance, 1993). In addition, some researchers have questioned the validity of the Impostor Phenomenon as a unique psychological phenomenon, suggesting it substantially overlaps with other psychological concepts such as self-esteem, defensive pessimism, fear of failure, and fear of success (e.g., Cozzarelli & Major, 1990; Fried-Buchalter, 1992). To validate the concept and further expand what is known

about Impostorism as a trait, an appropriate measurement instrument is needed. Three measures have been developed to assess Impostorism.

1.1.5.1 The Harvey Impostor Phenomenon Scale (HIPS)

Harvey developed the Harvey Impostor Phenomenon Scale (HIPS) to differentiate individuals who are high and low in impostor feelings and cognitions (in Topping & Kimmel, 1985). The HIPS has 14 items. Harvey reported an internal consistency of .85 based on a sample of 74 graduate students, a subsequent study by Topping and Kimmel (1985) using a more substantial sample of 258 university faculty members, reported internal consistency of .73 for men and .76 for females. However, some research has reported the HIPS has poor psychometric properties (e.g., Edwards, Zeichner, Lawler, & Kowalski, 1987).

Harvey (1981) originally conceptualised the HIPS as a unidimensional construct. Edwards, Zeichner, Lawler, and Kowalski (1987) conducted factor analysis of the HIPS using 104 postgraduate students, concluding that the HIPS contained three factors. These factors were labeled 1) Impostor, 2) Unworthiness, and 3) Inadequacy and accounted for 32.2%, 12.7%, and 9.8% of the variance, respectively. However Edward et al. (1987) found dual coefficient loadings or no salient loadings for three items. Coefficient alphas of the Impostor, Unworthiness, and Inadequacy factors were .81, .71, and .65, respectively. Edward et al. suggested that feelings of unworthiness and inadequacy may not be an integral part of Impostorism, although these feelings were associated with an experience of feeling like an impostor. Edward et al. also suggested that the scores derived from factor subscales of the HIPS were a more reliable measure of Impostorism than the scores from total scale which had an internal consistency of .34. They indicated that the HIPS may not be a unidimensional construct and cast doubt on

the reliability for the scores from the total scale, although their sample was limited and other studies have found better internal consistency (e.g., Fried-Buchalter, 1992; Hellman & Caselman, 2004; Topping & Kimmel, 1985).

Fried-Buchalter (1992) attempted to validate the convergent and discriminant validity of the HIPS in a sample of 104 mid-level managers. Fried-Buchalter considered the theoretical concept of the HIPS overlapped with 'Fear of Success' (FOS; Zuckerman & Allison, 1976). HIPS scores were highly correlated with Fear of Success in a female sample, $r = .63$, but only slightly correlated in a male sample, $r = .29$. Their factor analysis showed the HIPS comprised of four dimensions that were moderately correlated. These four factors included 1) Congruence of Achievement and Competence, 2) Sense of Competence, 3) Not an Impostor, and 4) Self-Estimate of Intellectual Ability. These factors accounted for 64% of variance. Second-order factor analysis of the four-factor HIPS, Fear of Failure and Fear of Success measure tapped two personality domains: 1) Lack of Self-Confidence and 2) The Competitive Neurosis. Although the internal reliability for the HIPS in this study was adequate, $\alpha = .82$, Fried-Buchalter (1992) concluded that the HIPS was a redundant measure, suggesting that it may be more appropriate to refer to the Impostor Phenomenon construct as a lack of self-confidence.

More recently, Hellman and Caselman (2004) assessed the psychometric properties and factor structure of the HIPS using a sample of 136 high school students. They found that the internal consistency of the HIPS was acceptable, $\alpha = .70$. However, Hellman and Caselman found problems with the content homogeneity of at least three items. In addition, they found the factor structure of the HIPS was unclear. The HIPS comprised four factors by using the Kaiser

criterion rule, three factors by the Scree test, and two by parallel analysis. Hellman and Caselman selected parallel analysis, giving the factors: Level of Self-Confidence and Core Characteristics of the Impostor Phenomenon. Hellman and Caselman questioned whether the HIPS possessed sufficient validity and reliability to justify its continued use in adolescent populations because of its content homogeneity, minimally acceptable levels of internal consistency reliability, and lack of reliable structure across different studies. According to Caselman, Self, and Self (2006) test-retest reliability of the HIPS is unavailable. With 14 items, some which have been questioned, this may be limited.

1.1.5.2 The Clance Impostor Phenomenon Scale (CIPS)

In order to address the psychometric problems of the HIPS, the 20-item Clance Impostor Phenomenon Scale (CIPS; Clance, 1985) was developed. The CIPS incorporated three core factors, including 1) the belief that one has fooled other people, 2) fear of being exposed as an impostor, and 3) inability to attribute own achievement to internal qualities such as ability, intelligence, or skills. In addition, Clance added items to the scale to measure three further attributes: 1) fear of evaluation, 2) fear of being unable to repeat success, and 3) fear of being less capable than others (Chrisman et al., 1995).

Research has shown the CIPS has good psychometric properties (Chrisman et al., 1995; French, Ullrich-French, & Follman, 2008; Holmes et al., 1983). The scale has a high level of internal consistency with alpha levels ranging from .84 to .96 (Cozzarelli & Major, 1990; Chae et al., 1995; Chrisman et al., 1995; French et al., 2008; Holmes et al., 1993).

The discriminative power of the CIPS was also established by Holmes et al. (1993). Holmes et al. compared the scores of 32 clinically identified Impostors

diagnosed by experienced clinicians and 30 non-Impostors from undergraduate student population on the CIPS and HIPS. This research showed the CIPS and HIPS could differentiate between clinically defined Impostors and non-Impostors; however, the CIPS was more sensitive than the HIPS.

Exploratory factor analysis of the CIPS in 269 undergraduate students by Chrisman et al. (1995) found the CIPS to have three primary factors: 1) self-perceived fraudulence (Fake), 2) discounting success (Discount), and 3) inability to internalise success (Luck), consistent with a previous study by Kertay, Clance, and Holland (1991 in Chrisman et al., 1995). The Fake, Discount, and Luck factors respectively accounted for 38.5%, 9.2%, and 7.2% of the variance in the CIPS. However, a more recent study by French et al. (2008) in 1,271 Engineering students found that the Discount and the Luck factors were highly correlated and confirmatory factor analysis failed to support the three factor structure of the CIPS. These researchers concluded that the CIPS could be seen as a single factor scale. French et al. (2008) had deleted four of the 20 items on the basis of previous research, which might change the factor structure. They used Confirmatory Factor Analysis (CFA) and despite a large sample conclude that it failed to provide one clearly best fitting model that supported the factor structure of the CIPS. French et al. suggested that further research is needed to clarify the factor structure of the CIPS.

The value of Impostorism as measured by the CIPS has been questioned as a unique psychological phenomenon. Cozzarelli and Major (1990) claimed that Impostorism may only be a reflection of general traits producing negative affect and may be better seen as an extension of poor self-esteem rather than an independent construct. Chrisman et al. (1995) disagreed with Cozzarelli and

Major's (1990) assertion and provided evidence that Impostorism can be seen as a distinct phenomenon. For instance, Chrisman et al. (1995) found a negative relationship between the CIPS and two measures of self-esteem: The Rosenberg Self-Esteem Scale (RS-ES; Rosenberg, 1965), r = -.60, and The Self-Esteem Scale (S-ES, Phinney & Cough, 1985), r = -.54. However, the correlation between these self-esteem scales, r = .75, was significantly larger than their correlation with the CIPS. Chrisman et al. argued that Impostorism can be substantially discriminated from the self-esteem construct and concluded that there was enough evidence to support the sufficient convergent and discriminative validity of the CIPS.

1.1.5.3 The Perceived Fraudulence Scale (PFS)

A different view of Impostorism was proposed by Kolligian and Sternberg (1991) who suggested creating a measure based on the concept of Perceived Fraudulence. Kolligian and Sternberg asserted that a self-consciousness dimension should be included amongst the core factors of the measurement of Impostorism, since Impostors are excessively preoccupied with others' evaluation of their behaviour. Kolligian and Sternberg, then, developed the 51-item Perceived Fraudulence Scale (PFS).

A factor analysis of the PFS in 100 undergraduate students revealed two viable factors. The first factor was called Self-Deprecation, which combined of a self-denigration attribution style with perfectionism, and accounted for 23% of the variance. The second factor was Inauthenticity or Fraudulent Ideation, which accounted for an additional 10% of the variance (Kolligian & Sternberg, 1991).

Chrisman et al. (1995) compared the psychometric properties of the CIPS and the PFS and found that both scales had high internal consistency and measured Impostorism in a similar fashion, and were correlated, r =.78. Internal

consistency of the CIPS and the PFS was .92 and .94, respectively. Although the PFS was more sensitive to concern over others' opinions and willingness to work for recognition, Chrisman et al. concluded that the CIPS was more useful than the PFS for clinical and research purposes due to its simpler administration and shorter length.

In summary, some studies find the HIPS has poor internal consistency reliability (e.g., Edwards et al., 1987), low discriminating power (Holmes et al., 1993), and uncertain structure (e.g., Fried-Buchalter, 1992; Hellman & Caselman, 2004). The PFS has good psychometric properties, but limited research on its properties (Chrisman et al., 1995; Kolligian & Sternberg, 1991). Its inclusion of self-presentational concerns may bias its relationships from Clance's clinical Impostor Phenomenon.

Impostorism in the present study will be measured by the Clance Impostor Phenomenon Scale (CIPS) because of its good psychometric properties, short length, and simpler administration (e.g., Chae et al., 1995; Chrisman et al., 1995; Cozzarelli & Major, 1990; French et al., 2008; Holmes et al., 1993). In addition, Holmes et al.'s (1993) findings suggested the relative strength of the CIPS in differentiating clinical Impostors from non-Impostors.

Working with undergraduates, Chrisman et al. (1995) and Kertay et al. (1991) showed that the CIPS comprised three similar factors: Luck, Discount, and Fake. However, French et al.'s (2008) study in a large sample of Engineering students suggested the CIPS' items comprised a single factor. Given these inconsistencies, the factor structure of the CIPS will be explored before further analyses.

1.2 Antecedents of Impostorism

Family environment, family dynamics, and parental rearing styles can affect the achievement values and achievement behavior of a child and influence how the child learns to deal with success and failure (Thompson, 2004). Predisposing personality traits, such as neuroticism and perfectionism, are assumed to be other factors which contribute to the emergence of Impostorism. These predisposing personality traits are assumed to be stable and may partly contribute to the formation of the cognitive schema of a person. In this thesis, family of origin and predisposing personality traits, particularly perfectionism, are assumed to be antecedents of Impostorism.

1.2.1 Family dynamics and Impostorism

According to clinical observations, impostor fears are derived from certain family situations in early childhood and are then reinforced through socialisation for achievement in adolescence and adulthood. Clance (1985) suggested four general characteristics of the family that contribute to the perpetuation of the Impostor Phenomenon from many of her patients' developmental histories: 1) the perception of Impostors that their talents are atypical compared with family members, 2) family messages that convey the importance of intellectual abilities and that success requires little effort, 3) discrepancy between feedback about Impostors' abilities and success derived from family and other sources, and 4) lack of positive reinforcement.

Bussotti (1990) investigated the family background of Impostors, focused on the family environment, the relationship between family members, and family structure, using the Family Environment Scale (Moos & Moos, 1986). With a sample of 302 students, Bussotti found that CIPS scores were negatively related to

the Family Cohesion and Expressiveness subscales and positively correlated with the Family Conflict and Family Control subscales of the Family Environment Scale. These four subscales: Family Cohesion, Family Expressiveness, Family Conflict, and Family Control, accounted for 12% of the variance in the CIPS scores (Bussotti, 1990). This suggested that impostors were likely to perceive that there was a lack of support, lack of communication, and lack of appropriate emotional expression among family members. High levels of family control, expression of anger and family conflict were also present. However, the total contribution of family environment in this study is modest.

Sonnak and Towell (2001) examined the relationship between parental rearing styles and the CIPS in 117 undergraduate students. In this study, parental rearing styles were measured by the Parental Bonding Instrument (PBI; Parker, Tupling & Brown, 1979). Sonnak and Towell found that perceived parental control/overprotection was weakly correlated with impostor fears, $r = .27$, while perceived parental care was inversely related, $r = -.41$. Sonnak and Towell concluded that parental overprotection was a factor in development of impostor fears.

Want and Kleitman (2006) replicated the study of Sonnak and Towell (2001) and explored Impostors' perception of their mother's and father's rearing styles in 115 participants from a wide range of occupations such as doctors, solicitors, business executives, small business owners, and graduate students. Want and Kleitman found that impostor fears were weakly correlated with high levels of control and domination by both mothers, $r = .25$, and fathers, $r = .34$. A moderate inverse relationship was found between impostor fears and the parental care of fathers, $r = -.30$. However, there was no significant relationship between

impostor fears and the parental care of mothers, $r = -.10$. Path analysis suggested that the rearing style of the father (care and overprotection) significantly predicted impostor fears, while the rearing style of the mother had an indirect effect on impostor fears via its relationship with the rearing styles of the father. The results were consistent with Sonnak and Towell's (2001) finding that impostor fears were best predicted by parental overprotection, although the relationship is not strong. Want and Kleitman's (2006) study additionally identified the role of overprotecting fathers in the aetiology of impostor fears.

Family messages about the importance of being naturally intelligent are also assumed to influence the ambitions and expectations of Impostors from early childhood. Impostors have a strong need to please (Bussotti, 1990), which may cause children to alter their behaviour in order to prevent the loss of affection from their parents (Clance, 1985). Impostors tend to conform to the standards of the family in order to gain positive feedback and verify their sense of self-worth. These modified behaviours may in turn conflict with the needs and capabilities of the child. Without psychological support or family approval of the child's accomplishments, the child may feel that his or her achievements are dismissed, unimpressive, or unimportant. Feelings of shame, humiliation, and inauthenticity are often experienced with a lack of consistent positive reinforcement (Clance, 1985; Clance et al., 1995; Clance & O'Toole, 1988).

King and Cooley (1995) studied the relationship between family achievement orientation and the development of impostor fears in 127 undergraduate students. A weak positive relationship between impostor fears and family orientation that emphasised achievement value and competition was reported, $r = .21$. This provides little support for Clance's (1985) observation

regarding family messages about the importance of achievement. However, family messages that emphasise success with less effort have not been investigated.

Although a weak positive link between family achievement orientation and impostor fears has been reported, King and Cooley (1995) observed that not every child from a family that has strong achievement values becomes an impostor. King and Cooley suggested that the way in which families deliver messages about their achievement values may play an important role in contributing to the development of impostor fears and that individual differences between the children, such as personality, may also be important.

According to the clinical literature, impostor fears originate as a result of specific types of family interactions. These include the messages from family, family values about achievement, and a child's designated roles in the family (Imes & Clance, 1984). Some of these developmental and family background factors have been examined in relation to Impostorism, generally finding weak support. However, the relationship between the development of Impostorism and how achievement-related messages from family have been delivered should also be considered.

Clance (1985) asserted that it is difficult for children to internalise their success when their performance is inconsistently reinforced or invalidated by parents and/or other family members. For instance, the child's family may invalidate the success of the child by sending direct or indirect message that the child is a sensitive or socially adept person (Clance & Imes, 1978). Although the child may want to validate his or her own intellectual competence, the child may come to doubt this competence this if achievements are attributed to sensitivity to a teacher's expectations or good social skills. Mixed messages about achievement may influence the emergence of impostor fears.

1.2.1.1 Mixed Messages about Achievement from Family

Mixed messages about achievement from family refer to family messages that emphasise the importance of being successful but do not provide clear messages or suggestions about how a child can achieve success or be considered successful (Thompson, 2004). Mixed messages about achievement also include reinforcement given by family, which is not related to the child's ability to achieve (Dinnel, Hopkins, & Thompson, 2002). When the family endorses the goal of academic or professional success, a child may remain unclear about the process for achieving that success. The child may also feel unsure about the best way to respond to new tasks, and how to progress purposefully towards their goals (Thompson, 2004). In addition, invalidating rewards or reinforcement that the child receives from family after completing the tasks often leaves the child feeling uncertain as to whether the success was related to their ability, or other incidental factors (Thompson, 2004). Children who are given mixed messages about achievement often feel anxious about their ability to achieve (Thompson, 1999).

In a study of 425 undergraduate students, Dinnel, Hopkins and Thompson (2002) reported a moderate correlation between confusing messages from the family with respect to academic achievement and impostor fears, $r = .33$. Dinnel et al. (2002) treated impostor fears as a factor component of failure avoidant behavior, while mixed messages about achievement from family were treated as a factor component of family environment in a broader model.

1.2.2 Personality Factors and Impostorism

A number of studies have examined how personality correlates with impostor fears to validate specific facets of impostor fears and to distinguish impostor fears from other psychological phenomenon. Topping (1983) found a

moderate positive correlation between impostor fears and trait anxiety, $r = .42$, in a sample of 285 university staff, which suggested that generalised anxiety was an important component of impostor fears. Topping also found that Impostors had a higher level of achievement motivation than non-Impostors. Topping concluded that in order to eradicate their own personal sense of self-doubt, Impostors are highly motivated to prove they are capable, competent, and worthwhile.

According to Chae et al. (1995), Casselman examined the relationship between impostor fears and the Eysenck Personality Inventory in medical students and found neuroticism was a significant predictor of impostor fears. This finding was supported by the study of Chae et al. (1995), using the NEO-Personality Inventory-Revised (NEO-PI-R; Costa & McCrae, 1992). In a sample of 654 Koreans (319 males and 334 females), Chae et al. found the Neuroticism facet of the NEO-PI-R was strongly correlated with impostor fears in both males, $r = .60$, and females, $r = .63$. The relationships between impostor fears and the anxiety and depression subscales in the Neuroticism domain were similar, both close to $r = .53$ for both males and females. A weak negative relationship was also found between impostor fears and Conscientiousness scale of the NEO-PI-R in both males, $r = -.36$, and females, $r = -.29$. Chae et al. concluded that lower conscientiousness reflected lower self-discipline in Impostors' pattern of work. When presented with work tasks, Impostors initially procrastinate and then go into a frenzy of activity in order to complete the tasks. A subsequent study by Bernard et al. (2002) in a sample of 190 college student, confirmed the findings of Chae et al. (1995) that personality profiles of Impostors are higher in Neuroticism, $r = .49$, and lower in Conscientiousness, $r = -.49$.

The association of Impostorism with neuroticism is consistent with the negative affect and dissatisfaction in life, with which Impostors present. However, an association of lower Conscientiousness with perfectionism in Impostors appears less expected. Hill, McIntire, and Bacharach (1997) confirmed forms of perfectionism were positively associated with Conscientiousness in a sample of undergraduate students, though Enn and Cox (2002) found a much weaker relationship in a clinical sample.

If the association of perfectionism and lower conscientiousness in Impostors is confirmed, it may be a reflection of Impostors' work habits, as Chae et al. (1995) suggest, or because individuals with perfectionism require a higher level of organisational skills and good working habits than they attain in order to achieve their perfectionistic standards, or it may reflect Impostors' tendency to self-deprecation.

1.2.2.1 Perfectionism

Perfectionism is a trait that is believed to have a marked impact on the development and maintenance of impostor fears. Kets de Vries (2005) asserted that perfectionism is the underlying cause of Neurotic Imposture. Impostors set "excessively high, unrealistic goals and then experience self-defeating thoughts and behaviors when they can't reach those goals" (Kets de Vries, 2005, p. 112). Within the clinical literature on the Impostor Phenomenon, perfectionism is repeatedly discussed as a dominant theme, with Impostors setting extremely high and often unrealistic standards for their self-evaluation (Imes & Clance, 1984). The need to be the best, the need to be able to do everything flawlessly and their tendency to overwork are the characteristics of Impostors that are consistent with the pursuit of perfection. Impostors' tendency to discount positive feedback and

maintain high standards for self-evaluation, while being critical of their inability to realise these standards could also be considered consistent with perfectionism.

The relationships between characteristics of Impostors and elements of perfectionism have been supported by some empirical studies. Thompson, Davis, and Davidson (1998) found perfectionistic cognitions in subjects reporting high levels of impostor fears, such as a tendency to externalise success, holding high standards for self-evaluation, overgeneralisation of a single failure experience to their overall self-concept, and a high level of self-criticism. Thompson, Foreman, and Martin (2000) compared Impostors and non-Impostors in their affective and cognitive reactions to making mistakes. Thompson et al. (2000) found that Impostors reported a higher concern about their mistakes and a greater tendency to overestimate the number of mistakes they had made than non-Impostors. In addition, Impostors also reported greater dissatisfaction with their performance and viewed their performance as less successful than non-Impostors. These findings provided empirical support for the observations of Clance (1985) that Impostors reject any performance that does not reach their perfect standard and consider their performance as disappointing.

In addition to perfectionistic cognition, a recent study by Ferrari and Thompson (2006) explored whether impostor fears were associated with perfectionistic self-presentation. In 165 undergraduate students, Ferrari and Thompson found that impostor fears were moderately associated with perfectionistic thoughts about avoiding imperfection, $r = .59$, non-display of imperfection, $r = .57$, and the need to appear perfect, $r = .40$. However, no significant correlation was found between impostor fears and non-disclosure of imperfection, $r = .17$. These results mean Impostors had the need to appear to be

capable, competent and successful in order to gain respect and admiration from others. They also strived to conceal their imperfection by not engaging in situations when they were likely to reveal their personal limitations to others. These characteristics found in Impostors were similar to those found in perfectionists, who are highly self-conscious and have a strong desire to conceal their mistakes from others in order to appear perfect (Frost, Turcotte, Heimberg, Mattia, Holt, & Hope, 1995).

The difference between Impostors and perfectionists is that perfectionists will not disclose their mistakes to other people because they fear being viewed as imperfect (Frost et al, 1995), while Impostors will openly communicate their self-perception of imperfect performance to others (Ferrari & Thompson, 2006). Impostors do not want to appear imperfect and actively attempt to conceal their imperfection, but paradoxically Impostors do openly disclose their imperfection to others. One issue is how far the characteristics of Impostors are interpersonal strategies, avoiding attributions by others, as distinct from more concerned with their own self evaluation.

Leary, Patton, Orlando, and Funk (2000) argued that behaviours of Impostors can be viewed as self-presentational strategies used to avoid negative interpersonal implications of potential failure by engaging in self-deprecating behaviours, such as discounting praise and positive feedback or denying that they are as competent as others believe. Leary et al. (2000) showed that Impostors expressed lower performance expectations than non-Impostors only when their performance would be revealed to others, while Ferrari and Thompson (2006) found CIPS scores were positively correlated with favourable impression management strategies.

Ferrari and Thompson (2006) further investigated the relationship between impostor fears and social desirability to clarify whether Impostorism involves mainly self-presentational strategies. Using the Balance Inventory for Desirable Responding Scales (Paulhus, 1984), Ferrari and Thompson found Impostors did not believe they are better skilled than they displayed, r = -.42, but there was a weak tendency for Impostors to attempt to present a positive impression to others, r = .24. Ferrari and Thomson concluded that "impostor fears may be regarded as behavioural demonstrations of perfectionism (but not public admission of failure) associated with frequent ruminations over being perfect" (p. 345). These studies may indicate that impostor fears are associated specifically with displays of perfect performance, but not necessarily general self-presentation concerns.

To clarify issues with perfectionistic cognitions and perfectionistic self-presentation in Impostors, it would be useful to distinguish the role of social expectations versus self-oriented perfectionism in Impostors.

1.2.2.2 Impostorism and Multidimensional Perfectionism

Perfectionism can have both personal and interpersonal aspects. Hewitt and Flett (1991) claimed that the interpersonal aspects of perfectionism are important in personal adjustment and the concept of perfectionism should not be solely focussed on self-directed cognition. Using a multidimensional concept, three types of perfectionism can be distinguished based on the source and the target of perfectionistic standards:

1) Self-Oriented Perfectionism (SOP) involves self-imposed perfectionistic standards.
2) Other-Oriented Perfectionism (OOP) involves having unrealistic expectations of the behaviour of significant others.

3) Socially Prescribed Perfectionism (SPP) involves a person's belief that they are subject to extremely high standards set by others.

The clinical Imposter Phenomenon literature seems to imply self-oriented perfectionism, which the self is the target and perhaps the source of perfectionism. For example, the need to be the very best and the Superman/ Superwomen aspect of impostors observed by Clance (1985) seem to reflect both the source and target of self-imposed perfectionistic standards within Impostors. However, perfectionistic standards of the family may also contribute to the development of impostor fears. When the child experiences difficulties in achieving something, the conflict between the need to fulfill the parents' perfectionistic standards and the fact that he or she cannot keep up the act of perfectionism forever creates doubts about his or her own abilities. In addition, the child's achievements do not always come with ease. The child may then jump to the conclusion that he or she is not really intelligent and he or she may become an intellectual Impostor (Clance & Imes, 1978).

A study by Cromwell, Brown, Sanchez-Huceles and Adair (1990) found Impostors are different from non-Impostors in that Impostors feel they need to achieve perfection in order to gain others' approval. This suggested that there may be social components contributing to perfectionism in Impostors. This is because Impostors fear being exposed to others as fraudulent and lacking in ability and attracting negative judgments from others. Thompson et al. (2000) found that Impostors have a higher level of fear of negative evaluation than non-Impostors and the motive behind their achievement behaviour is to meet their perception of other people's standards. These perceived social expectations may be a source of perfectionism in Impostors, which could be identified as socially prescribed perfectionism.

There is a need for research identifying the type of perfectionism associated with Impostorism. With family achievement values, perfectionism might be assumed a casual antecedent of Impostorism in childhood development.

1.3 Consequences of Impostorism

For Impostors, success does not mean happiness. Impostors often experience fear, stress, self-doubt, and feel uncomfortable with their achievements. It is important to identify how Impostors respond to impostor fears because this will determine the effects impostor fears have on their life. In this thesis, negative psychological affect and coping styles are assumed to be consequences of Impostorism.

1.3.1 Impostorism and negative psychological affect

Impostor fears interfere with a person's ability to accept and enjoy their abilities and achievements, and have a negative impact on their psychological well-being. When facing an achievement-related task, Impostors often experience uncontrollable anxiety due to their fear of failure. Burnout, emotional exhaustion, loss of intrinsic motivation, poor achievement, including guilt and shame about success are reinforced by repetitions of the Impostor Cycle (Chrisman et al., 1995; Clance, 1985; Clance & Imes, 1978). The perfectionistic expectations of Impostors also contribute to the feeling of inadequacy, increasing levels of distress, and depression when Impostors perceive that they are unable to meet the standards they set for themselves or expectations from family and people around them. Clinical observations by Clance (1985) revealed that high levels of anxiety, depression, and general dissatisfaction with life are common concerns that motivate Impostors to seek professional help.

The relationship between Impostorism and negative psychological affect has been supported by many studies. Conceptually there may be a clear distinction between negative affect as an enduring disposition, which may have contributed to the development of Impostorism in childhood, and negative affect as an outcome of a stressor like impostor fears. It is not clear that concurrent administration of assessments considered as personality and those considered clinically diagnostic can make this distinction. The substantial relationships of Impostorism with trait anxiety and depression, considered as personality, are likely to be affected by current experience of negative affect.

Chrisman et al. (1995) found impostor fears moderately correlated with depression however it was significantly more strongly correlated with the Depression Experience Questionnaire (DEQ) , r =.62, considered to assess the phenomenology of depression including depressive thoughts and feelings, than with assessments of psychiatric symptoms of depression or current affective state. Chrisman et al. also found a moderate relationship of impostor fears with pervasive affect, physiological indicators, and psychological concomitants, which were major characteristics of depression measured by the Zung Self-Rating Depression Scale (ZS-RSD: Zung, 1965).

Sonnak and Towell (2001) found that a high level of impostor fears were associated with poor mental health, r = .33, measured by the General Health Questionnaire (GHQ-12; Goldberg, 1978) in a sample of 117 undergraduate students. Henning et al. (1998) found that Impostorism accounted for the largest proportion of unique variance, comparing with perfectionism and demographic background, including gender, academic year of study, marital status, race, and previous mental health treatment, on psychological distress in medical and other

health profession students. Ross, Stewart, Mugge, and Fultz (2001) found depression slightly more related to Impostorism than Anxiety, with similar correlations.

1.3.2 Impostorism and Coping Styles

Coping refers to behavioural and cognitive efforts that one uses to manage the internal and external demands of a stressful situation (Lazarus & Folkman, 1984). How individuals cope with stress and how they draw upon their coping resources has been found to be influential for adjustment outcomes following life stress (Billing & Moo, 1981; Lazarus & Folkman, 1984). It is well established that coping styles have a marked impact on psychological health (Endler & Parker, 1990b; Nowack, 1990). Those who use an avoidant coping style have been shown to be more likely to suffer from recurrent episodes of depression than those who take an active coping approach (Sherbourne, Hays & Wells, 1995). In addition, task-oriented coping is found to have better effects on psychological health and somatic distress than emotion-focussed or avoidant coping (Beasley, Thompson & Davidson, 2003; Billing & Moos, 1981). The use of an active coping style can protect an individual from the effect of negative events, while the use of an avoidant approach, particularly emotion-focussed coping, appears to be a risk factor for poor health outcomes.

Within the Impostor Phenomenon literature, Clance (1985) observed that Impostors often used avoidant behaviour such as procrastination as a way to avoid stresses from achievement-related tasks. Using the Coping Inventory Scales (CISS: Endler & Parker, 1990a) Flett, Blankstein, and Martin (1995) suggested that procrastinators engaged in emotion-oriented coping and avoidance coping in the form of distraction.

The coping literature sometimes assumes a form of mediational model, in which the relationship between stressor and outcome is mediated, wholly or partly, by coping styles. If Impostorism is considered as a stressor, then coping style could influence the degree of psychological distress that results.

A study by Lefkowitz (2003) examined predictors of college adjustment in a sample of 365 first year college students. Lefkowitz proposed a casual mediational model explaining the relationships of impostor fears, self-esteem, and coping styles on different types of college adjustment. The results showed that impostor fears directly influenced all types of college adjustment, including, adjustment in social, personal, emotional, academic, and institution attachment. Lefkowitz also found that avoidance coping, measured by the Coping Strategy Indicator (CSI: Amirkhan, 1990), was related to impostor fears and was a mediator between impostor fears and all types of college adjustment.

In this thesis, it is proposed to test whether coping styles mediate the relationship between Impostorism and psychological distress, where coping styles and psychological distress are taken as consequences of Impostorism.

1.4 Summary of background research and limitations

This chapter has presented an overview of research into Impostorism, with particular focus on family achievement values and perfectionism, psychological distress, and coping styles in relation to Impostorism. A summary of Impostorism research in areas of family factors, personality factors, and negative psychological affect is presented in Table 1.1.

Table 1.1

Summary of Impostorism research in relation to Family Background, Personality Traits, Depression and General Mental Health

	Areas of Research	Study	Relationship with Impostorism		
Antecedents	Family Background	Bussotti, 1990	• Family Conflict • Family Control	Positive	Accounted for 12% of variance in the CIPS scores
			• Family Cohesion • Family Expressiveness	Negative	
		Sonnak & Towell, 2001	• Perceived parental control/ Over protection	.27*	
			• Perceived parental care	-.41***	
		Want & Kleitman, 2006	• Perceived maternal/paternal control/ Over protection	.25**(maternal) .34**(paternal)	
			• Perceived maternal/paternal care	-.10 (maternal) -.30** (paternal)	
		King & Cooley, 1995	• Emphasised achievement value and competition	.21*	
		Dinnel et al., 2002	• Confusing messages about academic achievement from the family	.33**	
	Personality traits	Topping & Kimmel, 1983	• Trait anxiety	.42***	
		Chae et al., 1995; Ross, et al., 2001; Bernard et al., 2002	• NEO-PI-R: Neuroticism	.46*** to .64***	
			• NEO-PI-R: Conscientiousness	-.22** to -.49***	
		Ferrari & Thompson, 2006	• Perfectionistic cognitions • Avoidance of imperfection • Non-display of imperfection • Need to appear perfect	.59*** .40*** .57*** .40***	
			• Non-disclosure of imperfection	.17	
Consequences	Depression	Chrisman et al., 1995	• Depressive thoughts and feelings (DEQ) • Characteristics of depression (ZS-RSD) • Beck Depression Inventory (BDI)	.62** .55** .42**	
	General Mental Health	Sonnak & Towell, 2001	• Poor mental health (GHQ-12)	.33**	
		Henning et al., 1998	• High level of psychological distress (BSI)	.49*** to .62***	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Studies suggested that family background could contribute to the emergence of Impostorism. However, from the summary in Table 1.1, correlations between family background variables and Impostorism were not strong. The strongest relationship was perceived a lack of parental care in Sonnak & Towell's (2001) study. Want & Kleitman (2006) suggested this perception may be specific to perceive paternal care but this correlation was slightly weaker than the one reported in Sonnak & Towell's study. A weak positive relationship also found between Impostorism and perceived parental control/overprotection and this relationship may also be stronger for the perception of control/overprotection from the father. In addition, confusing messages about achievement from the family appeared more strongly related to Impostorism than family achievement values that emphasised achievement via competition.

For personality factors, while one study has shown that Neuroticism was strongly related with Impostorism, others suggested it was a bit less related. Similarly, a strong negative correlation has been demonstrated for Conscientiousness and Impostorism in one study, though a few have found smaller correlations. As perfectionism is considered one of the most important characteristics of Impostorism, aspects of perfectionism and Impostorism would be expected to correlate relatively highly. Perfectionistic cognitions and non-display of imperfection were relatively strongly correlated with Impostorism, more highly than the correlation between Impostorism and trait anxiety. However, non-disclosure of imperfection was not significantly related to Impostorism.

Studies have shown the substantial role that Impostorism plays in psychological distress. Most studies have shown strong correlations, or perhaps some overlaps with measure of depressive thoughts and feelings, characteristics of

depression, and aspects of psychological distress. However, Impostorism appeared slightly less correlated to symptoms of depression assessed by the BDI.

There are some issues regarding the proposed development and consequences of impostor fears that still need to be addressed. The review suggests the need to confirm the relationship between impostor fears and how achievement-related messages from family were delivered. Achievement-related messages from family that are invalidated, inconsistent, or confusing may have more effect than family achievement values on the development of Impostorism. For the relationship with perfectionism, the kind of perfectionistic cognitions and role of self presentation concerns of Impostors are unclear. For example, it has not been clearly established whether the perfectionistic needs of Impostors are derived from social expectations or within the self.

Regarding the consequences of Impostorism, the review has demonstrated that impostor fears have the capacity to affect psychological health and well-being. However, the impact of coping styles on the relationship between Impostorism and psychological distress needs investigation. One plausible assumption is that specific coping styles, probably avoidance coping, may mediate the path from Impostorism to psychological distress.

1.5 The present study

This study of hypothesised antecedents and consequences of Impostorism is correlational. It cannot establish causal direction. It will assume that current self-ratings of a Mixed Messages about Achievement from Family Scale (MMAS) index a childhood factor that is causal for the development of Impostorism. It will also assume that perfectionism should be considered causal for the development

of Impostorism on the basis that perfectionism, appears a more general construct and less cognitively complex than the definition of Impostorism. This study will also evaluate the coping styles used by Impostors and explore their mediational effect on the relationship between Impostorism and psychological distress. Figure 1.2 illustrates the proposed model, in which Impostorism is considered to mediate the relationship between its antecedents and psychological distress.

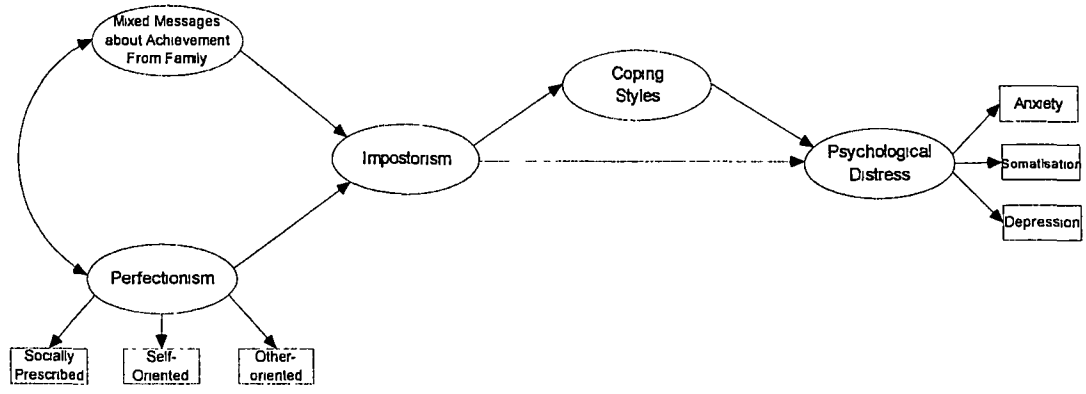


Figure 1.2 Conceptual model illustrating the links between antecedents and consequences of Impostorism.

The sample used in these analyses will be university students. According to Clance (1985) university students are likely to experience high levels of impostor fears because of the high demands on intellectual capacity, high level of competition, and constant evaluations on academic performance. Although most Impostors are able to fulfill the academic requirements to complete their degree, the repetitions of impostor fears in this context may contribute to establishing Impostorism as a chronic condition continued into subsequent professional life and continue to interfere with a person's performance and their quality of life (e.g., Clance, 1985; Imes & Clance, 1984; Sonnak & Towell, 2001).

The Clance Impostor Phenomenon Scale (CIPS; Clance, 1985) was selected for the assessment of Impostorism in this thesis. The items of the CIPS assess 1) the belief that one has fooled other people, 2) fear of being exposed as an impostor, 3) inability to attribute own achievement to internal qualities such as ability, intelligence, or skills, 4) fear of evaluation, 5) fear of being unable to repeat success, and 6) fear of being less capable than others. These six components measured by the CIPS are the operational definition of Impostorism in this thesis.

1.5.1 Aims

This study aims to investigate mixed messages about achievement from family and subtypes of perfectionism as hypothesised antecedents of Impostorism; and to investigate coping styles and psychological distress as hypothesised consequences of Impostorism.

1.5.2 Hypotheses

1. Mixed Messages about Achievement from Family and Perfectionism contribute to Impostorism.

2. Self-Oriented Perfectionism, Other-Oriented Perfectionism, and Socially Prescribed Perfectionism serve as indices of a Perfectionism latent variable accounting for their contribution to Impostorism. Alternatively Impostorism will be related to specific aspects of perfectionism, especially Self-Oriented Perfectionism.

3. Coping Styles will partially mediate the relationship between Impostorism and Psychological Distress.

4. Anxiety, Depression and Somatisation serve as indices for a Psychological Distress latent variable accounting for their relationships with Impostorism.

5. Finally, it is hypothesised that the contribution of Mixed Messages about Achievement from Family and Perfectionism on Coping Style and Psychological Distress will be fully mediated by Impostorism.

CHAPTER 2

Exploratory Analysis of the Scales

2.1 Introduction

As discussed in the previous chapter, there are some inconsistencies in the findings regarding the factor structure of the Clance Impostor Phenomenon Scale (CIPS). In addition, there has been limited research investigating the factor structure of the Mixed Messages about Achievement from Family Scale (MMAS). A first step in the research reported in this thesis is to explore the underlying factors and the internal reliability of the scales assessing mixed messages about achievement from family and Impostorism. For the Multidimensional Perfectionism Scale, Coping Inventory for Stressful Situation, and Symptoms Checklist-90-Revised, the subscales were considered sufficiently well established for it to be inappropriate to attempt to revise them.

2.1.1 Mixed Messages about Achievement Scale (MMAS)

Thompson and Dinnel (2001) created the Mixed Messages about Achievement Scale (MMAS). The MMAS has 17 items that assess inconsistent validation and mixed messages about achievement that may be received from family members, as well as negative outcomes of mixed messages about achievement that affect individuals. Some of the MMAS items were also expected to tap the achievement-oriented values of the respondents' family. The factor structure of the MMAS has not been reported.

2.1.2 Clance Impostor Phenomenon Scale (CIPS)

The Clance Impostor Phenomenon Scale (CIPS) was developed to assess dimensions of Impostorism that have not been addressed by the Harvey Impostor Phenomenon Scale (Holmes et al., 1993). These dimensions include fear of evaluation, fear of inability to repeat success, and feeling less capable than peers (Holmes et at., 1993). As described in chapter 1, Kertay et al. carried out a factor analytic study of the CIPS and identified three primary factors: 1) Fake, 2) Discount, and 3) Luck (Chrisman et al., 1995). The Kertay et al. three-factor CIPS model was supported by the results of a study by Chrisman et al. (1995).

Although previous studies (Chrisman et al., 1995; Kertay et al., 1991) claimed that the CIPS has a stable factor structure, a more recent study on psychometric properties of the CIPS by French et al. (2008) did not support the three-factor structure. French et al. (2008) deleted four out of 20 items on the basis of previous findings and found that the Fake and Discount factors were too highly correlated, $r = .98$ presumably adjusted for unreliability, to be considered independent constructs. Confirmatory Factor Analysis (CFA) also failed to provide one clearly best fitting model that supported the factor structure of the CIPS (French et al., 2008). Given the high internal consistency of the total score, $\alpha = .92$, these researchers suggest the CIPS total score may be more appropriate than a three-factor application.

French et al. (2008) did not find that Confirmatory Factor Analysis clearly resolved the issue, despite working with a relatively large sample. It was therefore not considered appropriate to repeat this approach with a smaller sample. French et al. had deleted 4 of the 20 items on the basis of an unpublished manuscript. It was decided to review the 20 items on the Australian sample used. Items which

have the lowest communalities on initial factoring (or lowest item-total correlation for a proposed single scale like the CIPS) will be considered for exclusion before the final factor analysis. While the items are rated on a 5-point scale, Pearson correlations will be used because the intended use of these scales (like almost all psychological tests or scales) involves adding the ratings to produce totals, for which purpose ordinal or categorical approaches are not relevant.

Principal Axis extraction will be used, unlike previous studies reported by Chrisman et al. (1995) which used Principal Component Analysis (PCA), as the factor approach is considered more appropriate. There is not a universally accepted approach to determining the number of factors to be extracted which involves a tradeoff between adequacy and parsimony. The criterion of Eigenvalues greater than one is precise but arbitrary. It is not reliable for Eigenvalues close to one. The Scree test addresses the issue of clear emergence of factors and although it is not necessarily precise, it should be considered especially for Eigenvalues close to one. As the intended purpose of these analyses is to produce psychologically meaningful scales, the interpretability of rotated factors and consistency with the scale's aim should also be considered in adopting a structure for use in subsequent analyses. Items which are not consistent with the proposed interpretation of the others on a factor will also be considered for deletion.

As the CIPS was intended as a single scale, oblique rotation will be used on the basis of the hypothesis that subscales would be correlated and to estimate these correlations at the hypothesised underlying factor level. The correlation estimates from CFA reported by French et al. (2008) included .98 in one case, presumably these incorporate adjustment for unreliability.

For the MMAS-17 items, a similar approach will be used. Although the original items appear to represent two factors, mixed messages about achievement from family and negative outcome from mixed messages, it was considered preferable to apply oblique rotation to avoid constraining factors which may be related to be uncorrelated. The Pattern Matrix will be used as the basis for interpretation as the loadings used to generate the factors are likely to be more distinct than the correlations with the factors if the factors are correlated.

2.2 Aims

The present analysis aims to explore the underlying factors of the Mixed Messages about Achievement from Family Scales (MMAS) and to investigate the factor structure of the Clance Impostor Phenomenon Scales (CIPS). These scales may then be refined for use in later analyses.

2.3 Method

2.3.1 Participants

Four hundred volunteers (320 females and 80 males) were recruited from students at the University of Tasmania between 2003 and 2006. After excluding 45 participants who had not completed all the items in the questionnaires and after deleting one multivariate outlier (refer to 2.3.3.2), data from 354 participants was available for the analyses. These 354 participants comprised 290 females (81.9%) and 64 males (18.1%). The ages of participants ranged from 18 to 54 years (M = 24.46, SD = 8.55).

2.3.2 Measures

2.3.2.1 Mixed Messages about Achievement Scale (MMAS-17). Items comprising this scale were created by Thompson and Dinnel (2001). The items

assess the extent to which individuals feel they receive defective, inconsistent or mixed messages about their achievement success (e.g., Item 15, *Sometimes I receive praise from my family for my academic achievement, and sometimes I don't*). These messages carry potential to leave the individual unsure about the determinants of his or her achievement outcomes and unsure of his or her ability (e.g., Item 9, *Based on feedback from my family, I'm often unsure whether or not I genuinely have ability*). Items within the scale also assess the degree to which family members emphasise the importance of achievement and getting ahead (e.g., Item 4, *Getting ahead in life is very important in my family*). Participants rate each of 17 items on a seven-point rating scale with end-point designations *not very true of me* (1) and *very true of me* (7).

2.3.2.2 Clance Impostor Phenomenon Scale (CIPS; Clance, 1985). The CIPS is a 20-item self-report instrument designed to assess the extent to which an individual experiences impostor fears. Responses are given on a five-point Likert scale ranging from *not at all true* (1) to *very true* (5). The CIPS comprises items that capture the different aspects of impostor fears such as *At times, I feel my success was due to some kind of luck* and *Sometimes I am afraid others will discover how much knowledge or ability I really lack.* Internal consistency coefficients for the CIPS are high, with alphas ranging from .84 to .96 (Chae et al., 1995; Chrisman et al., 1995; Cozzarelli & Major, 1990; Holmes et al., 1993; French et al., 2008).

2.3.3 Procedure

Before commencing the project, ethical approval to conduct the research was obtained from Human Research Ethics – Social Science (Tasmania). Participants were recruited from each of the three campuses of the University of

Tasmania at Hobart, Launceston, and the Cradle Coast. An invitation to participate was made via posters and flyers, through the research participant recruitment section of the School of Psychology website, and through in-person invitations delivered in classes.

Participants received an information sheet explaining the nature and purpose of the study and a set of questionnaires (See Appendix A1-A6). Participants completed the questionnaires in their own time then returned them to the researcher either directly or through a return box in the School of Psychology. One hour course credit was given to Psychology I students for their participation.

2.3.3.1 Analysis Strategy

Data screening and Exploratory Factor Analysis were generated using the Statistical Package for the Social Sciences version 14.0 (SPSS Inc., 2005).

2.3.3.2 Data Screening

Scores for each test were screened for missing data, outliers, and normality. There were 45 cases of missing data (11.25%) in this sample. These 45 cases were excluded from the analyses.

There were no univariate outliers beyond $z = 3.29$, $p < .001$. The Mahalanobis distance technique was used to detect multivariate outliers with critical value $\chi^2(13) = 34.53, p = .001$ (Tabachnick & Fidell, 2007). There was one multivariate outlier which was excluded from analyses.

2.3.3.3 Factor Analysis

Principal Axis Factoring with oblique rotation was used to identify factors comprising the MMAS and the CIPS. The scales may be refined by dropping items that have low communality, low face-validity, redundant content, or make little contribution to the presumed underlying factors.

2.4 Results

2.4.1 Mixed Messages about Achievement Scale (MMAS)

Factor analyses of the MMAS data are summarised in Appendix B1. The KMO statistic was .91, confirming factorability of the scale. There were three Eigenvalues above 1, although the third was marginal, being 1.02. The Scree test supported two factors. It was decided to interpret the two-factor solution. After oblique rotation Factor 2 was effectively orthogonal with Factor 1, $r = -.003$, which suggests that these two factors are independent.

The two-factor Pattern loadings are presented in Table 2.1 (the Structure Matrix is presented in Appendix B1, and gives similar conclusions). The first factor, identified as *mixed messages from family*, loaded items 1, 3, 5, 6, 7, 9, 10, 12, 13, 15, 16, and 17. The loadings ranged from .40 to .85. The content of two items (item 16 and 17) do not refer to family. While item 16 (*I feel I receive mixed messages about my ability to achieve*) refers to mixed messages, item 17 (*Sometimes I feel my achievement is attributed to things that are irrelevant*) was considered to overlap with Item 10 (*In my family, success is frequently attributed to factors that are irrelevant*) and on this basis was excluded. Item 13 (*In my family, we often try to out-do each other*) had a relatively poor loading (.40) on Factor 1, and its content related to Factor 2, which would confuse the interpretation of this subscale. Therefore, this item was also excluded.

The second factor, identified as *family's achievement values*, comprised items 2, 4, 8, 11(reversed) and 14, loading with values ranging from .39 to .91. The internal consistency estimate (Cronbach's alpha) for the 10 item *Mixed Messages from Family subscale (MMF)* was .91. However, internal-consistency was poor, $\alpha = .61$, for the 5 item *Family Achievement Values (FAV)* subscale.

Table 2.1

Pattern Matrix of the MMAS excluding items 13 and 17.

	Mixed Messages about Achievement Scale	Factor 1	Factor 2
1.	Sometimes my family encourages me academically while at other times I am not encouraged.	***0.42***	0.08
2.	In my family we feel it is important to do the best we can at whatever we do.	-0.25	***0.51***
3.	In our family, how one may achieve success academically is never really explained.	***0.53***	-0.19
4.	Getting ahead in life is very important in my family.	0.14	***0.69***
5.	I am never completely sure whether my family believes in my academic ability.	***0.81***	-0.06
6.	I can never figure out whether my family genuinely supports me academically.	***0.77***	-0.18
7.	My family gives me mixed messages about my academic ability.	***0.85***	-0.02
8.	In my family, achievement is very important.	0.06	***0.91***
9.	Based on feedback from my family, I'm often unsure whether or not I genuinely have ability.	***0.85***	0.01
10.	In my family, success is frequently attributed to factors that are irrelevant.	***0.69***	0.00
11.	In my family, achievement is not emphasised very much.	-0.32	***0.51***
12.	Based on feedback I receive from my family, I can never figure out whether my achievement is due to my ability or to some other factor.	***0.82***	-0.04
13.	In my family, we often try to out-do each other.	-	-
14.	"Work before play" is the rule in my family.	0.14	***0.39***
15.	Sometimes I receive praise from my family for my academic achievement, and sometimes I don't.	***0.57***	0.09
16.	I feel I receive mixed messages about my ability to achieve.	***0.85***	0.06
17.	Sometimes I feel my achievement is attributed to things that are irrelevant.	-	-

2.4.2 Clance Impostor Phenomenon Scale (CIPS)

Factor analyses of the CIPS data are summarised in Appendix B2. Principal Axis Analyses with an oblimin rotation yielded three factors with Eigenvalues greater than one for the CIPS. This finding was similar to the previous research of Chrisman et al. (1995) which suggested three factors for the CIPS: *Fake*, *Discount*, and *Luck*. However, the communalities of item 1 (*I have often succeeded on a task even though I was afraid that I would not do well before I undertook the task*) and 2 (*I can give the impression that I'm more competent than I really am*) were low and these items had low item-total correlations, $r = .25$ for Item 1 and $r = .23$ for Item 2. These items were excluded. Item-total correlation and communalities of the items in the CIPS are presented in Appendix B2.

The 18 remaining items of the CIPS were reanalysed, the results confirming the factorability of the scale with the KMO statistic = .94. There were two Eigenvalues above 1. Factor 1 comprised of items 3, 4, 7, 10, 12, 14, 15, 16, 17, 18, 19, 20, loaded from .36 to .88. Factor 2 comprised of items 5, 6, 8, 9, 11, 13, loaded from .34 to .84 (Table 2.2 for Pattern Matrix and Appendix B3 for Structure Matrix, which provided similar conclusions).

However, the Scree test suggested a one factor model. Factor 1 (comprising 43.54% of variance) had substantially greater weight than Factor 2 (comprising 8.00% of variance). In addition, factor correlation of factor one and two after rotation was relatively high, $r = -.62$, and the interpretation of items in factor two was less meaningful as an independent factor (Items 5, 9, 11 appear to represent the Chrisman et al. (1995) Luck factor while item 6 and 8 represent the Fake factor). Therefore, it was decided to interpret the CIPS as a single factor scale. The internal consistency estimate was good for the 18-item CIPS, $\alpha = .92$, supporting the single factor interpretation after excluding weak or inappropriate items.

Table 2.2

Pattern Matrix of the CIPS excluding items 1 and 2

Clance Impostor Phenomenon Scale (Clance, 1985)	Factor 1	Factor 2
1. I have often succeeded on a task even though I was afraid that I would not do well before I undertook the task.	-	-
2. I can give the impression that I'm more competent than I really am.	-	-
3. I avoid evaluations if possible and have a dread of others evaluating me.	***0.40***	-0.28
4. When people praise me for something I've accomplished, I'm afraid that I won't be able to live up to their expectations of me in the future.	***0.44***	-0.33
5. I sometimes think I obtained my present position or gained my present success because I happened to be in the right place at the right time or knew the right people.	-0.02	***-0.72***
6. I'm afraid people important to me may find out that I'm not as capable as they think I am.	0.32	***-0.49***
7. I tend to remember incidents in which I have not done my best more than those times I have done my best.	***0.36***	-0.31
8. I rarely do a project or task as well as I'd like to do it.	0.28	***-0.34***
9. Sometimes I feel or believe that my success has been the result of some kind of error.	-0.03	***-0.84***
10. It's hard for me to accept compliments or praise about my intelligence or accomplishments.	***0.55***	-0.09
11. At times, I feel my success was due to some kind of luck.	0.02	***-0.73***
12. I'm disappointed at times in my present accomplishments and think I should have accomplished much more.	***0.54***	-0.15
13. Sometimes I'm afraid others will discover how much knowledge or ability I really lack.	0.37	***-0.42***
14. I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well at what I attempt.	***0.68***	-0.01
15. When I've succeeded at something and received recognition for my accomplishments, I have doubts that I can keep repeating that success.	***0.70***	-0.17
16. If I receive a great deal of praise and recognition for something I've accomplished, I tend to discount the importance of what I've done.	***0.59***	-0.08
17. I often compare my ability to those around me and think that they may be more intelligent than I am.	***0.69***	-0.02
18. I often worry about not succeeding with a project or an examination, even though others around me have considerable confidence that I will do well.	***0.88***	0.22
19. If I'm going to receive a promotion or gain recognition of some kind, I hesitate to tell others until it is an accomplished fact.	***0.59***	0.10
20. I feel bad and discouraged if I'm not "the best" or at least "very special" in situations that involve achievement.	***0.41***	-0.20

2.5 Discussion

In this study, Exploratory Factor Analysis (EFA) was conducted to explore the underlying factors of the MMAS and to test the three-factor components model of the CIPS.

2.5.1 Mixed Messages about Achievement Scales

The MMAS items were originally created to tap three different contexts, including mixed messages about achievement from family, negative outcomes of mixed messages, and achievement value of family. However, the findings of the present research suggested a two-factor model. The first factor comprised items that reflect mixed messages about achievement in the family (Mixed Messages from Family: MMF). The second factor comprised items that reflect Family Achievement Value (FAV). These two factors were substantially independent.

Item 13 was excluded from the MMAS because of its poor loading on the first factor. Item 17 was also excluded since the content of this item was ambiguous and did not assess the received message in the family context. Therefore, ten items of MMF and five items of FAV will be used for the subsequent analyses.

2.5.2 Clance Impostor Phenomenon Scales

Low item-total correlations and low communalities were found for items 1 and 2. This result confirmed the previous findings of Kertay et al. and Chrisman et al. (1995) that items 1 and 2 were problematic and should be excluded from future research or their content should be revised. However, inter-item correlations and communalities of item 19 and 20 in this study were not problematic as in the previous studies and so were retained.

The results suggested that CIPS is best interpreted as a single factor scale since the weight of the first factor was substantially greater than the second one and the factors after oblique rotation were well correlated. The factor structure of the CIPS is not as stable as suggested by Chrisman et al. (1995) and may depend on whether poor items are included. The results of the present analysis support Kertay et al. in dropping items 1 and 2 (Chrisman et al., 1995), but did not identify a need to drop others.

Since the items in factor 2 were a mixture of Luck and Fake items, this factor was not considered to reflect a clearly interpretable theme. French et al. (2008) suggest additional items would need to be added for the Luck factor to be clear. The results support the suggestion of French et al. (2008) that the CIPS should be treated as a single factor measure and the interpretation of the scale should based on the total score. Two fewer items were excluded without reducing internal consistency.

A revision of the scale is required if subscales of the CIPS are to be useful. As French et al. (2008) suggest, some theoretical clarification of Impostorism would help develop items that better reflect component dimensions of Impostorism.

CHAPTER 3

Antecedents of Impostorism

3.1 Introduction

This chapter focusses on the antecedents of Impostorism and examines the contributions of mixed messages about achievement from family and perfectionism on Impostorism.

3.1.1 Mixed messages about achievement from family

Clance (1985) identified four characteristics of the family that may contribute to the development of Impostorism. As children, 1) Impostors perceived that their own abilities are exceptional in their family, 2) the feedback about achievement Impostors received from family was inconsistent with the feedback received from others, 3) Impostors rarely received positive reinforcement for their accomplishments and 4) their families tended to emphasise that intelligence is best revealed when one achieves at a high level with little effort.

Support for the role of family environment in the development of Impostorism has been reported in a number of studies. Aspects of parenting critical in the genesis of impostor fears include high levels of parental control and over protection (Sonnak & Towell, 2001). An unsupportive family background, where communication and behaviours are rule-governed and restrictive was associated with impostor fears (Bussotti, 1990). A family emphasis on achievement orientation was also found to be related to impostor fears (King & Cooley, 1991). However, the reported effects of family environment, parental rearing styles, and family

achievement orientation on impostor fears were relatively small. This suggests that how family achievement values and messages are delivered to the children may contribute more to the development of Impostorism.

Clance (1985) suggested inconsistencies between family feedback and feedback from others as one factor that may contribute to the development of Impostorism. From clinical anecdotes, Langford and Clance (1993) identified a pattern of defective family reinforcement, suggesting that as children, Impostors were praised for factors that had little to do with achievement outcomes. Such factors include elements such as charm, good looks, or being socially adept. This is an example of mixed messages from family that leave children with a feeling of uncertainty about their achievement and competency. Another factor important to the development of Impostorism may be inconsistencies between messages about achievement within the family, which warrants further exploration.

3.1.2 Perfectionism

Perfectionism has been identified as one of the key characteristics of Impostorism (Clance, 1985). Research found that there were some similarities between perfectionistic cognition and the behavior of Impostors such as setting high standards for achievement goals, overworking, having high standards for self-evaluation, and a tendency to externalise their success (e.g. Thompson et al., 1998; Thompson et al., 2000, Ferrari & Thompson, 2006).

Clance (1985) claimed that Impostors wanted to appear perfect in every aspect of their life. They wanted to be the best and be able to do everything flawlessly, presumably to satisfy their sense of self-competency. However, Impostors have a strong need to achieve perfection to gain others' approval (Cromwell et al., 1990). This suggested that social components may also influence Impostors' perfectionistic behaviour.

In order to clarify the source of perfectionism contributing to Impostorism, this analysis examines Multidimensional Perfectionism (Hewitt & Flett, 1989). Based on the different sources (self/others) and targets (self/others) of perfectionism, three types of perfectionism can be distinguished: Self-Oriented Perfectionism, Other-Oriented Perfectionism, and Socially Prescribed Perfectionism.

3.2 Aims and Hypotheses

The present analysis aims to investigate the contributions of mixed messages from family and perfectionism to Impostorism. This analysis also aims to explore whether Impostorism are related to a specific type of perfectionism or to perfectionism in general.

1. Family Achievement Values, Mixed Messages from Family and Perfectionism contribute to Impostorism.
2. Self-Oriented Perfectionism (SOP), Other-Oriented Perfectionism (OOP), and Socially Prescribed Perfectionism (SPP) serve as indices of a Perfectionism latent variable accounting for their contribution to Impostorism. This is shown as one model of hypothesised antecedents of Impostorism in Figure 3.1.
3. Alternatively Impostorism will be related to specific aspects of Perfectionism, especially Self-Oriented Perfectionism if motivated by self concerns, or Socially Prescribed Perfectionism if motivated by social concerns.

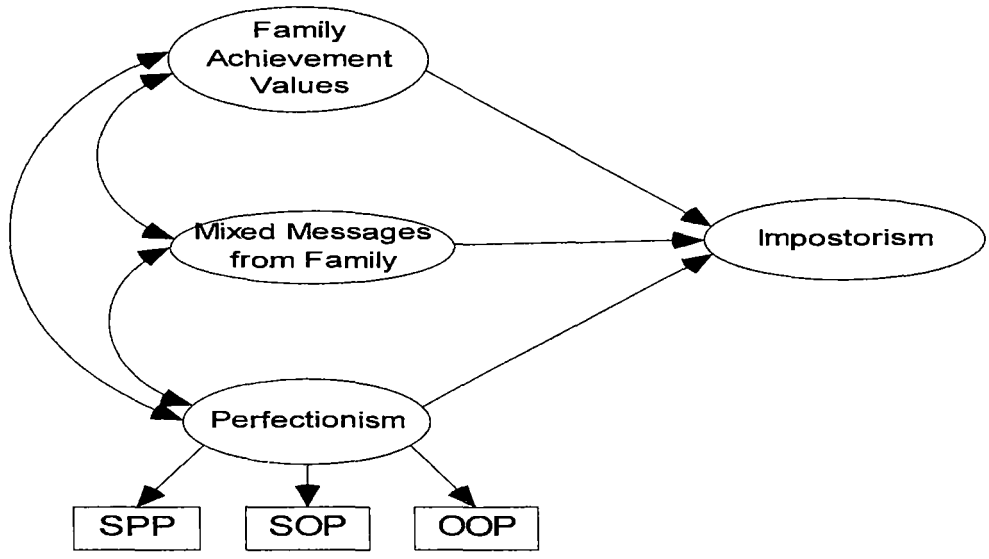


Figure 3.1 Hypothesised Antecedent Model 1 illustrating links between Family Achievement Values, Mixed Messages from Family, and Perfectionism on Impostorism.

3.3 Method

3.3.1 Participants

Three hundred and fifty four participants (290 females and 64 males) in this analysis were those used in chapter 2.

3.3.2 Measures

3.3.2.1 Mixed Messages about Achievement Scales: Ten items of Mixed Messages from Family (MMF) and 5 items of Family Achievement Values (FAV) were used in the analyses. The scores of the MMF, in this sample, ranged from 10 to 69 ($M = 31.84$, $SD = 14.10$) and 6 to 35 ($M = 23.54$, $SD = 5.72$) for the FAV. Internal consistency coefficients of MMF and FAV were .91 and .61, respectively.

3.3.2.2 Clance Impostor Phenomenon Scale: 18 items of the CIPS were used in the analyses. Internal consistency for the 18-item CIPS was .92. The 18-item CIPS scores of the sample used in this thesis ranged from 22 to 88 ($M =$

55.70, *SD* = 14.10), distributed over practically the full range of the scale from 18 to 90.

3.3.2.3 Multidimensional Perfectionism Scale (MPS: Hewitt & Flett, 1991) The MPS assesses perfectionistic traits of individuals. The MPS has three subscales measuring Self-Oriented, Other-Oriented, and Socially Prescribed perfectionism. Coefficient alphas of .86 for Self-Oriented Perfectionism, .82 for Other-Oriented Perfectionism, and .87 for Socially Prescribed Perfectionism were reported by Hewitt and Flett (1991). The coefficient alphas for Self-Oriented Perfectionism, Other-Oriented Perfectionism, and Socially Prescribed Perfectionism obtained from this analysis were .91, .78, and .87, respectively. In order to improve the coefficient alphas of Other-Oriented Perfectionism and Socially Prescribed Perfectionism, items with low item total correlation will be excluded from the subscales, if this improves Cronbach's alpha.

For Other-Oriented Perfectionism, item total correlations ranged from .27 to .51. Deleting an item with lowest item total correlation did not improve the coefficient alpha of the subscale. Therefore, no item in Other-Oriented Perfectionism was deleted. However, item 37 in the Socially Prescribed Perfectionism subscale had a low item total correlation (.11), while item total correlations of other items in the subscale ranged from .41 to .67. With Item 37 deleted, Cronbach's alpha increased slightly to .88. Therefore, Item 37 was deleted from SPP scale. The reduced subscale was used for subsequent analyses.

Means, standard deviations, and ranges of the MMF, FAV, CIPS, and MPS are summarised in Appendix B4.

3.3.3 Analysis Strategies

Model testing was conducted using Structural Equation Modelling (SEM). The models were estimated by AMOS version 6.0 (Arbuckle, 2005). An advantage of SEM is the theoretical underpinnings, including representing the relationships between the measured variables and the latent variables (or factors) where appropriate (Hoyle, 1995). When models have both measurement components, in which distinct measures such as subscales, contribute to latent variables, and structural components, representing predictive relationships between latent variables, the departure from fit may be divided into these distinct components. Where relevant in this thesis analyses will focus on evaluating measurement models before fitting structural models. Testing the measurement model involves a form of Confirmatory Factor Analysis (CFA) and obtains estimated correlations between all of the latent variables. Hypothesised Antecedent Model 1 in Figure 3.1, in practice, tests only measurement issues, that is whether the three perfectionism subscales can be treated as components of a general perfectionism latent variable (Hypothesis 2) to account for their correlations with the other variables included. The structural component of Antecedent Model 1 is saturated and will not contribute to departure from fit, it will provide estimated regression paths rather than the correlations obtained from the measurement model.

In Structural Equation Modelling, when latent variables are defined by multiple measures, the correlations or path estimates are adjusted for the unreliability evident between the measures. To make estimates comparable in these analyses when a scale is included which is not hypothesised through a latent variable the scale will be divided into two arbitrary parts by randomly allocating

items into two split halves as nearly equal as possible, contributing through a latent variable corresponding to the scale after adjusting for unreliability. Split halves may also contribute to some decrease in fit due to weakness in the scale and random error without other theoretical significance (which is why the split half measures have not been illustrated in conceptual models like Figure 3.1 which show theoretically significant or hypothesised measurement structures).

Maximum Likelihood (ML) methods were utilised for estimating free parameters. According to Hoyle and Panter (1995), ML performs reasonably well under a variety of 'less-than-optimal analytic conditions', such as small sample size, or excessive kurtosis. Through the process of estimation, fit statistics will be evaluated to check how well the models fit to the data or whether any modification is required to increase the fit.

There are different fit indices and rules of thumb about their values indicating good or acceptable fit (Byrne, 2001). For the analyses in this thesis, Chi-Square, the relative Chi-Square (CMIN/DF), the Root-Mean-Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Goodness-of-Fit Index (GFI), are considered for evaluating fit.

The chi-square fit index tests the hypothesis that the given model fits the covariance/correlation matrix as well as an unconstrained. However chi-square is very sensitive to the sample size and parsimony/complexity of the model. With larger sample size, it is more likely that the hypothesised model will depart significantly by chi-square. The use of CMIN/DF or relative chi-square which adjusts for model parsimony/complexity should be considered more useful in evaluating fit. A value of CMIN/DF smaller than 2 indicates a very good model fit (Byrne, 2001), values less than 1 may indicate overfitting.

The RMSEA is recognised as one of the most informative criteria in SEM (Byrne, 2001). As it is a parsimony-adjusted index, it takes into account the error of approximation which is not affected by sample size and relaxes the requirement on Chi-Square that the model holds exactly in the population (Kline, 2005). A value less than .05 indicates 'good fit', and values up to .08 represent reasonable errors of approximation in the population (Byrne, 2001). MacCallum, Browne, and Sugawara (1996) suggested that RMSEA values from .06 to .10 indicate 'mediocre fit' and thus values greater than .10 are considered 'poor fit'. Hulland, Chow, and Lam (1996) proposed that RMSEA values between .05 and .10 may be considered 'adequate fit'.

The comparative fit indices: CFI, TLI, and GFI, are widely used in SEM to assess the relative improvement in fit to the model. The proposed model is compared to some baseline model fit criteria. CFI and TLI assess how much better the estimated model fits with the observed data, while GFI compares the hypothesised model with no model at all (Byrne, 2001). TLI, CFI, and GFI vary from 0 to 1. GFI should be equal to or greater than .90. For TLI, values close to 1 (or .95 for large samples) indicate a very good fit and values above .90 suggest an acceptable fit. For CFI, values greater than .90 indicate a well-fitting model. However, Hu and Bentler (1999) suggested a revised cutoff value of .95 for CFI.

If fit is less than desirable, model modification can be used to increase fit, and to suggest limitations of the original model. Where appropriate, Modification Indices (MI) will be considered to improve the fit of the data. The MI estimates the improvement of overall Chi-Square test of model fit that would be achieved if that specific parameter were set free (MacCallum, 1995) or path added. Modifications made to an original model should be theoretically meaningful and

justifiable (MacCallum, 1995), as the use of MI is purely data driven. This departs from the hypothesised model testing approach but is useful in suggesting explanations for lack of fit and suggesting directions for model development subject to confirmation in subsequent research.

3.4 Results

3.4.1 Correlations

Correlations of Family Achievement Value (FAV), Mixed Messages from Family (MMF), Clance Impostor Phenomenon Scale (CIPS), Self-Oriented Perfectionism (SOP), Other-Oriented Perfectionism (OOP), and Socially Prescribed Perfectionism (SPP) are shown in Table 3.1.

The CIPS had moderate positive relationships with MMF and SPP, and a weaker relationship with SOP. However, no significant correlation was found of the CIPS with FAV and OOP.

FAV was weakly and positively correlated with all dimensions of perfectionism. MMF was moderately correlated with only one dimension of perfectionism, SPP, thus the association of MMF and SPP with CIPS is partly shared.

Table 3.1

Correlations of Family Achievement Values, Mixed Messages from Family, Multidimensional Perfectionism and Impostorism (N = 354)

	MMF	FAV	SOP	OOP	SPP
MMF					
FAV	-.09				
SOP	.09	.27**			
OOP	.09	.14**	.42**		
SPP	.47**	.22**	.40**	.32**	
CIPS	.51**	.05	.34**	.08	.54**

Note. MMF = mixed messages from family; FAV = family achievement values; SOP = self-oriented perfectionism; OOP = other-oriented perfectionism; SPP = socially prescribed perfectionism; CIPS = Clance impostor phenomenon.

** $p < 0.01$.

3.4.2 Structural Equation Modeling

To test the contribution of measures to latent variables hypothesised to contribute to Impostorism, the measurement model of FAV, MMF, Perfectionism and Impostorism was generated. As FAV, MMF and Impostorism are defined by split-halves, the substantive hypothesis being tested is that Perfectionism as a latent variable defined by SPP, SOP and OOP can account for the correlations between Perfectionism components measures and the other variables. Antecedent Measurement Model 1 is presented in Figure 3.2.

Antecedent Measurement Model 1 generated χ^2 (21, N = 354) = 136.76, $p < .001$, CMIN/DF = 6.51, GFI = .93, CFI = .93, TLI = .88, and RMSEA = .13.

The results of CMIN/DF, TLI, and RMSEA showed that the model fit was inadequate.

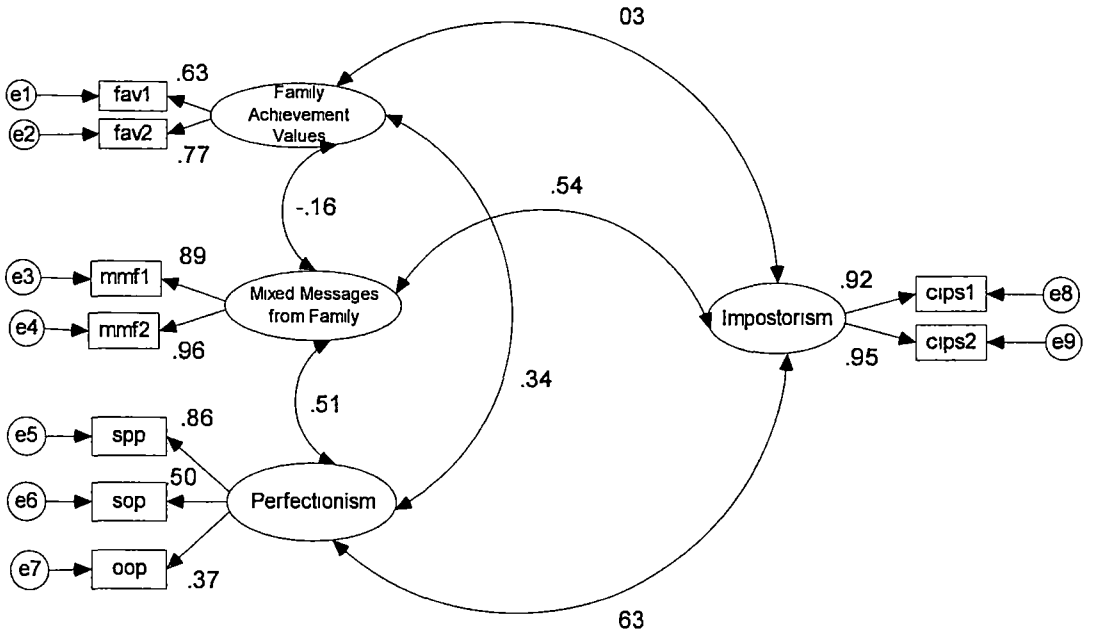


Figure 3.2 Antecedent Measurement Model 1

The path from Family Achievement Value (FAV) to Impostorism was not significant. Since the present analysis is concerned with variables contributing to Impostorism, the negligible path from FAV to Impostorism suggested FAV be excluded from further consideration. After excluding FAV from the measurement model, the model fits were not improved: χ^2 (11, N = 354) = 108.86, $p < .001$, CMIN/DF = 9.90, GFI = .92, CFI = .93, TLI = .87, and RMSEA = .16.

The modification indices (MI) suggested that the model could be improved by adding a negative path from Impostorism to OOP and/or a path from MMF to SOP. Adding a path from SOP to OOP could also help improve the model fit. It was concluded that combining SPP, SOP and OOP as a parts of general perfectionism was not appropriate in the present context and that these dimensions of perfectionism should be treated as independent constructs. However, as OOP was not correlated with Impostorism, OOP was deleted from further consideration.

MMF, SOP and SPP were then included in the Antecedent Measurement Model 2 testing their contributions to Impostorism using split-halves of SOP and SPP, see Figure 3.3. The measurement model generated χ^2 (14, N = 354) = 35.41, $p < .01$, CMIN/DF = 2.53, GFI = .98, CFI = .99, TLI = .98, and RMSEA = .07, which was good, as expected for split-half measurement.

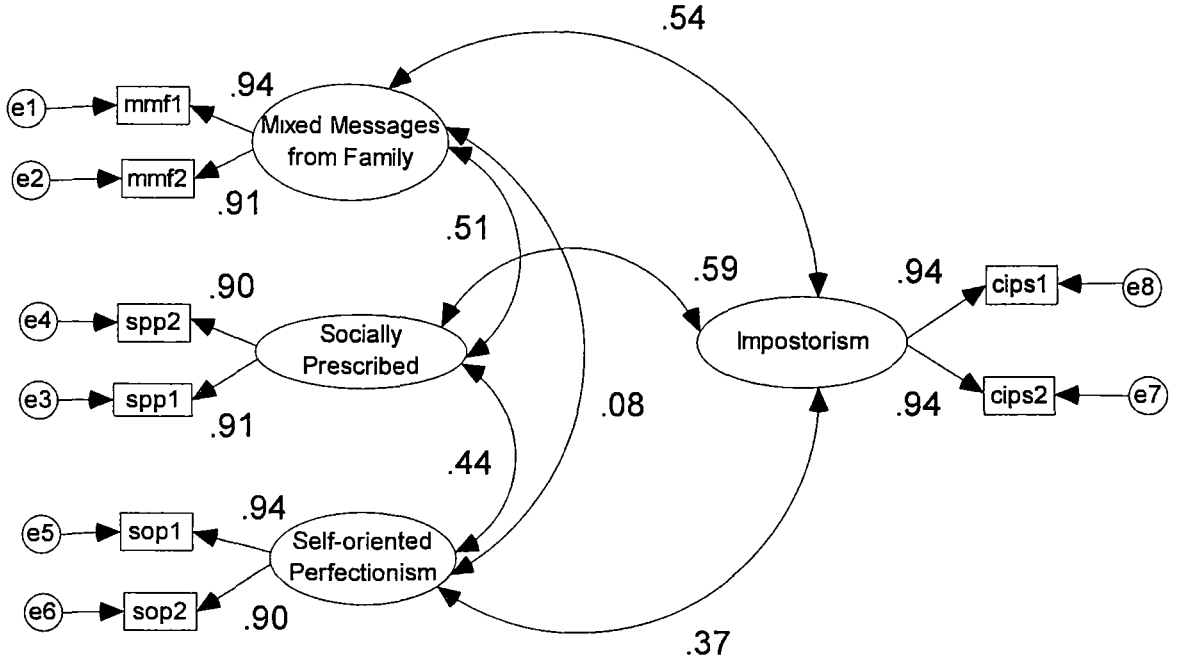


Figure 3.3 Antecedent Measurement Model 2

The correlation path between MMF and SOP in model 2 (Figure 3.3) was not significant ($p = .18$). The path was, therefore, deleted before testing the contributions of MMF, SOP and SPP in a structural model predicting Impostorism, shown in Figure 3.4. The Antecedent Structural Model 1 generated χ^2 (15, N = 354) = 37.17, $p < .001$ CMIN/DF = 2.48, GFI = .98, CFI = .99, TLI = .98, and RMSEA = .07. While good, the fit represents split-half measurement except for the post-hoc removal of a direct path from MMF to SOP. The contributions of MMF, SPP, and SOP together can account for 46% of the variance in Impostorism

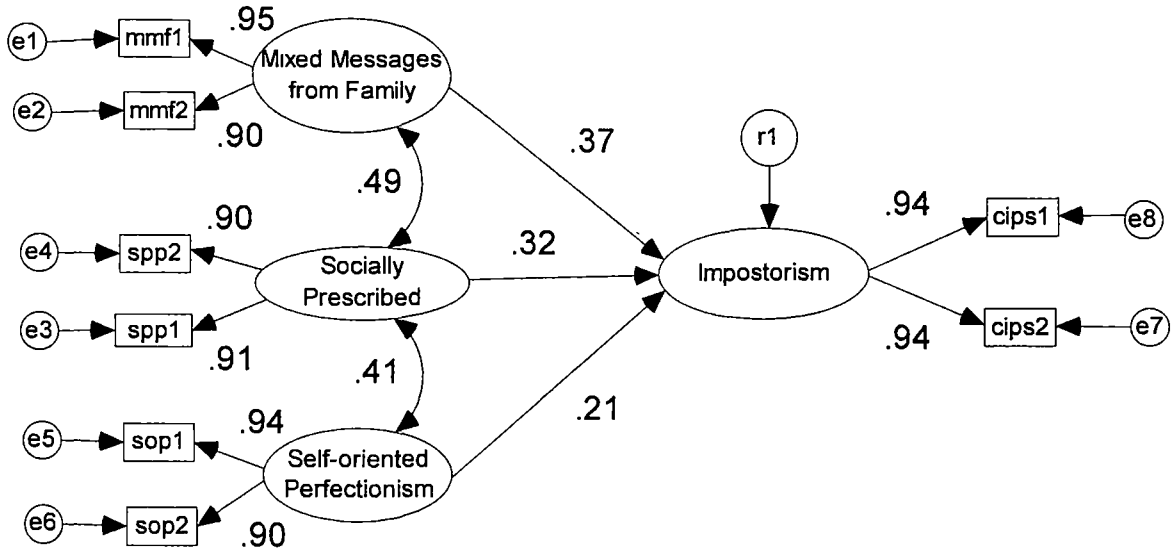


Figure 3.4 Antecedent Structural Model 1

The results from Antecedent Structural Model 1 (Figure 3.4) confirm that MMF, SOP, and SPP all have significant contributions if treated as predictors of Impostorism. The standardised regression weights of the path from MMF, SOP, and SPP to Impostorism are smaller than the correlations in Antecedent Measurement Model 2 (Figure 3.3) due to the apportionment of shared variance as a result of the moderate correlations of MMF and SOP with SPP.

It was originally hypothesised that MMF might contribute to the development of perfectionism. As MMF is uncorrelated with SOP, this specific hypothesis is not supported. However, MMF may contribute to the development of SPP. This would suggest as an alternative interpretation of Antecedent Structural Model 1 (Figure 3.4), that the effect of MMF on the development of Impostorism may be partly mediated by SPP. An additional interpretative hypothesis, based on the weaker correlation of SOP with Impostorism, is that this might reflect mediation via SPP. Antecedent Structural Model 2 in Figure 3.5

represents these interpretative alternatives, retaining the significant direct link from SOP to Impostorism; the fit is negligibly different from Antecedent Structural Model 1 (Figure 3.4) as the modelling is equivalent.

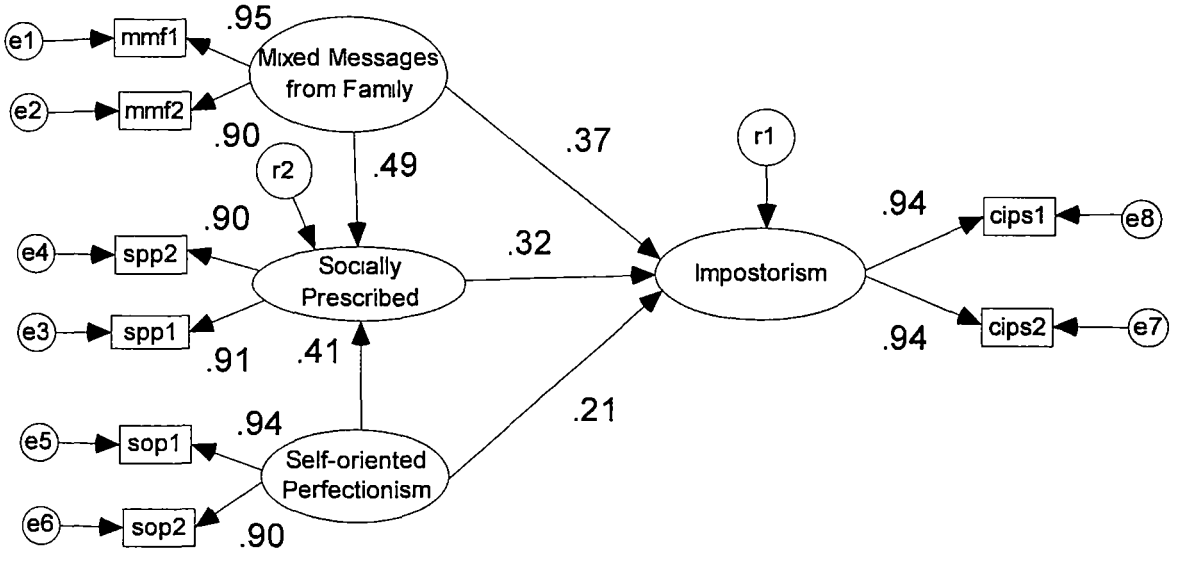


Figure 3.5 Antecedent Structural Model 2

If the significant direct path from SOP to Impostorism is deleted, Antecedent Structural Model 3 generates χ^2 (16, N = 354) = 50.81, $p < .001$, CMIN/DF = 3.18, GFI = .97, CFI = .98, TLI = .97, and RMSEA = .08 (Figure 3.6). While the fit of Antecedent Structural Model 3 (Figure 3.6) is marginally poorer than Antecedent Structural Model 2 (Figure 3.5), it could be considered acceptable with a slight advantage in model parsimony.

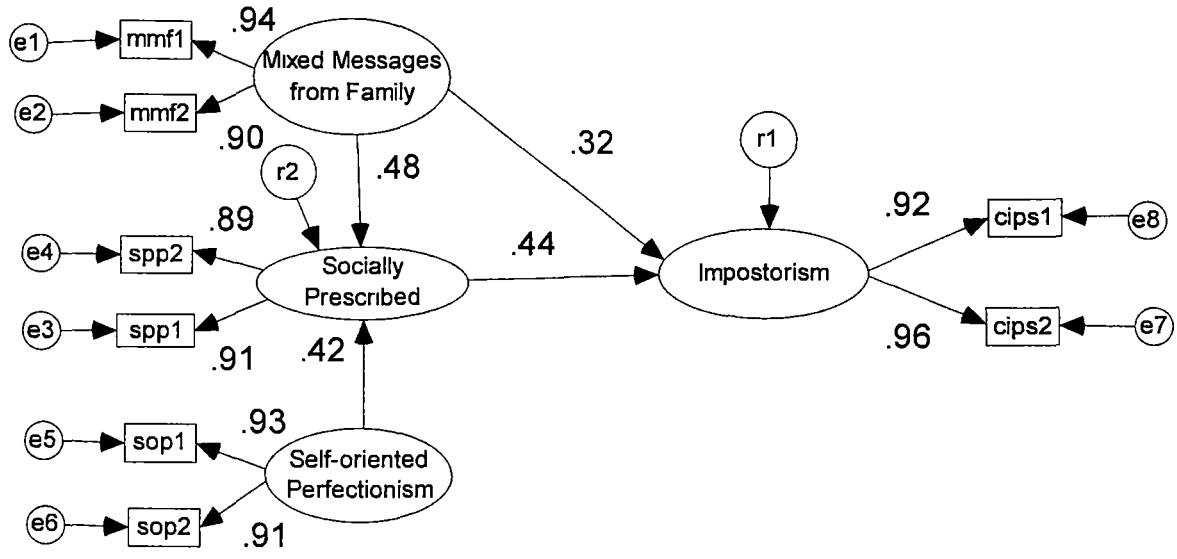


Figure 3.6 Antecedent Structural Model 3

The hypothesis that SPP partly mediates the effect of MMF and mediates, partly or entirely the effects of SOP on Impostorism cannot be clearly rejected by this analysis. However, these predictive directions are peripheral to this analysis and were not considered to have adequate theoretical justification to adopt Antecedent Structural Model 2 or 3. Antecedent Structural Model 1 (Figure 3.4) will be used as the basis of the complete model incorporating hypothesised consequences of Impostorism.

3.5 Discussion

This analysis focussed on the roles of mixed messages from family, family achievement values, and multidimensional perfectionism contributing to Impostorism. It was expected that Mixed Messages from Family (MMF), Family Achievement Value (FAV) and Perfectionism would have direct effects on Impostorism.

A family environment that emphasises achievement values and behaviours is commonly reported by Impostors and is considered as one of the key elements contributing to the development of Impostorism (Clance, 1985). King and Cooley (1995) investigated this relationship and found a weak relationship between family achievement orientation and Impostorism, $r = .21$.

No relationship between FAV and Impostorism was found in this analysis. One explanation is that FAV may not directly contribute to the emergence of impostor fears. Since not everyone from an achievement oriented family develops impostor fears, the factors that trigger impostor fears may be related to how the achievement related messages were delivered to the person (King & Cooley, 1995). In this analysis FAV is not adequately measured by the items on the Mixed Messages about Achievement Scale (MMAS), better measurement for family achievement values might find a meaningful relationship. However, the results of King and Cooley (1995) and of this study do not support further investigation of its relationship with Impostorism.

This analysis found a moderate relationship between MMF and Impostorism. Since the messages about achievement that Impostors receive from the family are inconsistent and since it is unclear how achievement goals might be realised, these mixed messages are likely to create confusion as to how one can attain the standards of the family or how one can achieve success. In combination with the lack of positive reinforcements when goals have been achieved, Impostors may feel that they are a failure and gradually come to believe that they will never meet the achievement standards set by their parents unless they do everything perfectly. Thus, mixed messages from family appear to directly contribute to the emergence of impostor fears, exacerbating a failure to internalise

family standards, and might contribute to the development of aspects of perfectionism.

Parents' achievement orientation has been shown to affect the development of perfectionism in a bulimic sample (Head & Williamson, 1990) as well as in a sample of gifted children (Ablard & Parker, 1997). In this analysis, weak relationships were found between FAV and the components of perfectionism and there were some components of perfectionism directly contributing to impostor fears, thus there may also be a weak mediated relationship from FAV to Impostorism that better measurement and a larger study might find.

The other major conclusion of this section is that it is specific components of perfectionism that contribute to the development of Impostorism. In the context of Impostorism, treating each component of perfectionism as a separate construct was more appropriate than combining them as components of a unidimensional or general perfectionism. Impostorism is most strongly related to SPP, somewhat less to SOP, but in this analysis, not to OOP despite the relationship of OOP with SPP and SOP.

Although the characteristics of perfectionism Clance (1985) observed in Impostors appeared to be a mixture of SOP and SPP, the findings of this analysis pointed to the role of SPP as the factor contributing more to impostor fears. Cromwell et al. (1991) report that the difference between Impostors and non-Impostors is characterised in terms of the degree of a person's need to be perfect in order to gain approvals from others. For Impostors, their sense of self-worth and the process of self-verification rely heavily on feedback from others. Impostors continue to pursue their unrealistic standards because of their fears of

negative evaluations and of social exposure as intellectual frauds (Langford, 1990; Thompson et al., 2000). As such, the self-directed standards possessed by Impostors may not be primarily based on the need to satisfy the sense of their own competency but could mainly reflect the strategies used by Impostors attempting to reach or maintain achievement standards they perceive as imposed from their family or others. SOP makes a significant addition to the prediction of Impostorism by SPP, though this is not large. Further research might aim to clarify the origins of the specific form of perfectionism adopted by Impostors.

In this analysis, only SPP and SOP were associated with Impostorism. The absence of a relationship between OOP and Impostorism suggests that Impostors internalise the pressure from the social expectations of others and react to these pressures by internalising the expectation as applying to themself as a special person as distinct from others. The object of the perfectionistic expectations of SOP and SPP is the self, while SPP externalises the source in the form of the social expectations (Flett, Hewitt, Oliver, & Macdonald, 2002). This self-consciousness is one of the personality facets found in Impostorism (Bernard et al., 2002; Chae et al., 1995; Ross et al., 2001). As such, individuals with impostor fears are prone to experience shame and guilt when they fail to reach the perceived social expectations of others, similar to those with SPP (Tangney, 2002).

Further research on the hypothesised antecedents of Impostorism could consider the relationship of perfectionism amongst parents of Impostors with high family achievement values and mixed messages from the family in order to help clarify the relationship between these variables and the possible mediation by SPP, at least partly, of the direct relationship between MMF and Impostorism.

CHAPTER 4

Consequences of Impostorism

4.1 Introduction

Impostorism negatively affects the well-being and quality of life of a person. Although the relationship between Impostorism and psychological distress has been established, the hypothesised dynamic of this link via coping styles warrants further exploration. This chapter aims to establish the relationships between coping styles, Impostorism, and psychological distress. This chapter also aims to develop a consequences model of Impostorism, in which coping style may mediate the link between Impostorism and psychological distress.

4.1.1 Psychological Distress

Clinical observation indicates that Impostors report experiencing generalised anxiety, depression, somatisation, lack of self-confidence, and frustration (Clance, 1985; Clance & Imes, 1978). Subsequent research has found associations between Impostorism and global negative affect, including depression, anxiety, somatisation, anger, and low self-esteem (Cozzarelli & Major, 1990; Kollingian & Sternberg, 1991; Leary et al., 2000)

Anxiety and depression are believed to be important characteristics of Impostorism (Chae et al., 1995). Impostors are claimed to have a personality profile that makes them disposed to be depressed and anxious (Bernard et al., 2002). A study by McGregor, Gee, and Posey (2008) in college students suggests that

Impostors experienced symptoms that are similar to people with mild depression.

Although the relationships between impostor fears, anxiety and depression have been established, there is no evidence suggesting that impostor fears cause clinical levels of anxiety or depression. According to Clance (1985), impostor fears are not "a pathological disease that is inherently self-damaging or self-destructive" (p. 23), rather, it interferes with the psychological health and well-being. The emotional consequences Impostors experience are a combination of negative psychological affects, suggesting that the consequences of Impostorism should be explored in terms of global psychological distress rather than a specific clinical symptom. Since anxiety, somatisation, and depression are major complaints of people with a high level of impostor fears, this analysis uses these symptoms as representing aspects of psychological distress.

4.1.2 Coping Styles

Although the negative effects of impostor fears on psychological health and well-being have been established, how impostor fears contribute to psychological distress has not been fully identified. One possible way to understand the relationship between impostor fears and psychological distress involves understanding Impostors' coping styles. Coping styles influence both the physical and psychological well-being of a person following life stress (Billing & Moo, 1981; Lazarus & Folkman, 1984). Different styles of coping lead to different adjustment outcomes. Active styles of coping such as task-oriented coping can protect an individual from the effects of negative events (Beasley et al., 2003), while using emotion-focussed or avoidant coping as a predominant style of coping is more likely to generate negative consequences such as depression or anxiety (Sherbourne et al., 1995).

Clance (1985) suggests avoidance is used by Impostors to cope with stressful situations, particularly with achievement-related tasks. However, the research into the links between Impostorism and coping is limited.

4.2 Aims and Hypotheses

The aim of this chapter is to establish the relationships between Impostorism, coping styles, and psychological distress. It also explores whether coping styles mediates the relationship between Impostorism and psychological distress.

1. Anxiety, Depression and Somatisation serve as indices for a Psychological Distress latent variable accounting for their relationships with Impostorism.
2. Coping Style or perhaps multiple Coping Styles will partially mediate the relationship between Impostorism and Psychological Distress. Figure 4.1 illustrates the hypothesised model for the relationships between Impostorism and Psychological Distress.

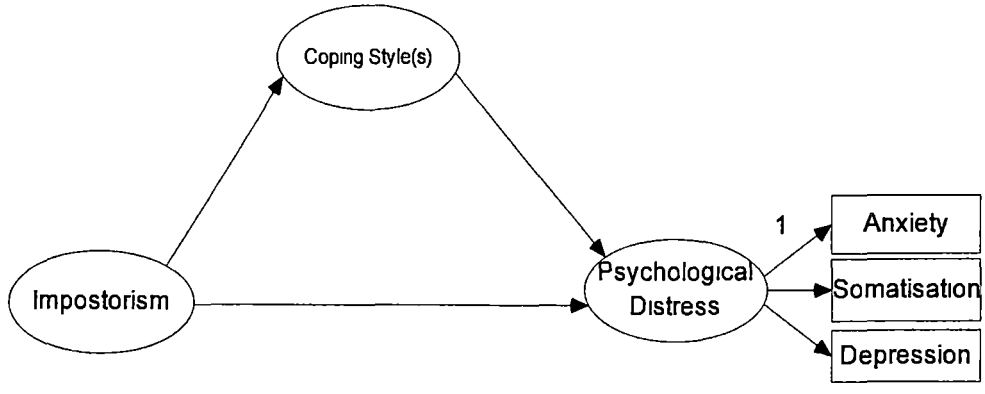


Figure 4.1 Hypothesised model for the relationships of Impostorism, Coping Style, and Psychological Distress.

4.3 Methods

4.3.1 Participants

The participants in this analysis were those in the analyses reported above (Chapter 2 and 3). The sample has 354 participants, 290 females and 64 males.

4.3.2 Measures

4.3.2.1 Clance Impostor Phenomenon Scale (CIPS): The 18 items from the CIPS were used in the analyses, for modelling these were split-halves.

4.3.2.2 Coping Inventory for Stressful Situations (CISS): The CISS (Endler & Parker, 1990a) was used to identify preferred styles of coping. This 48-item inventory differentiates three general types of coping: Task-Focussed, Emotion-Focussed, and Avoidance Oriented Coping. The Avoidance subscale is further divided into Distraction and Social Diversion subscales. The inventory uses a five-point Likert scale with end-point designations *Not at all* (1) and *Very much* (5). Respondents indicate how much they engage in a particular activity when they encounter a stressful situation. Some sample items are: *Schedule my time better* (Task-Focussed), *Become very upset* (Emotion-Focussed), and *Visit a friend* (Avoidance).

Sixteen items load on each of the three subscales, while eight load on Distraction and five on Social Diversion. Internal consistencies for the subscales ranging from .78 to .90 are reported by Endler and Parker (1990a). Test-retest reliability was reported as moderate to high, above or equal to .68, with Task-Focussed Coping and Emotion-Focussed Coping having the highest reliabilities. Distraction and Social Diversion Coping had more moderate reliabilities from .59 to .60. In the current analysis, coefficient alphas of .89, .89, .76 and .80 were obtained for Task-Focussed, Emotion-Focussed, Distraction and Social Diversion, respectively.

4.3.2.3 Symptom Checklist-90-Revised (SCL-90-R): The SCL-90-R has been widely used as a measure of general mental health and changes in psychological symptoms (e.g., Bech, et al., 1993; Derogatis, 2008), outcomes of clinical trials (Holland, et al., 1991), psychotherapy trials (Piper, Azim, McCallum, & Joyce, 1990), and as a brief indicator of mental health (Derecho, Wetzler, McGinn, Sanderson, & Asnis, 1996). In addition, the Anxiety and Depression subscales of the SCL-90-R have been used as psychiatric outcomes measure (Holi, 2003).

Three subscales of the SCL-90-R (Derogatis, 1983) were used in this analysis. They are the 12-item Somatisation subscale, the 10-item Anxiety subscale, and the 13-item Depression subscale. Each of the items is rated on a five-point discrete scale of distress, ranging from *not at all* (0) to *extremely* (4). Sample items are: *How much were you distressed by headaches?* (Somatisation), *How much were you distressed by nervousness or shakiness inside?* (Anxiety), and *How much were you distressed by thoughts of ending your life?* (Depression). Derogatis (1983) reported internal consistency coefficients of .85 to .90 and test-retest correlation of .80 to .86. Coefficient alphas of .87, .90, and .91 for Somatisation, Anxiety, and Depression, respectively, were obtained in the current analysis.

Means, standard deviations, and ranges of the CIPS, CISS, and SCL-90-R are presented in Appendix B4.

4.3.3 Analysis Strategies

Correlational analyses were conducted by using SPSS program version 14.0 (SPSS: SPSS Inc, 2005). AMOS 6.0 (Arbuckle, 2005) was used to estimate the hypothesised model and mediational role of Emotion-Focussed Coping.

According to Baron and Kenny (1986), there are four conventional steps in considering the mediated effects of a variable.

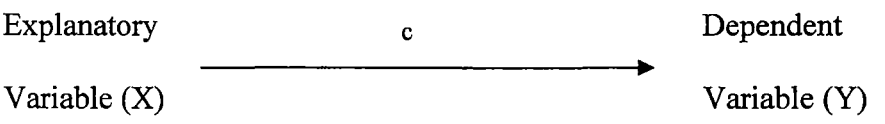
1. The explanatory variable must be significantly associated with the dependent measure (see Path c in Figure 4.2B).
2. The explanatory variable must be significantly related to the mediator (Path a in Figure 4.2B).
3. The mediator must be significantly associated with the dependent measure (see Path b in Figure 4.2B).

Conditions 1-3 can be considered the context in which mediation is meaningful, though some authors consider that not all are necessary.

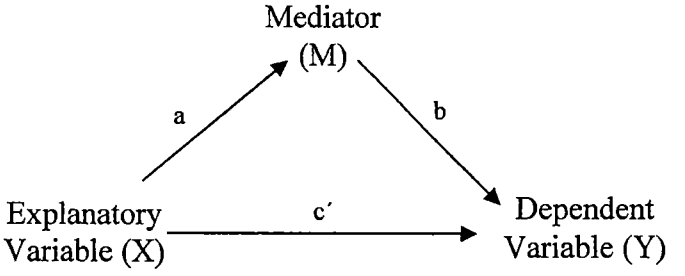
4. The impact of the explanatory variable on the dependent measure should be zero after controlling for the mediator (compare Path c in Figure 4.2A with Path c′ in Figure 4.2B).

Condition 4 can be considered the test for mediation. It is not possible with a sample to establish that c′ is zero in the population, so some criterion needs to be adopted for c′ being negligible in this context. This may include that c′ is nonsignificant, though this varies with the power of the study. A criterion consistent with the model testing approach is that the mediational model with c′ cut if this is hypothesised is an adequate fit to the data. The mediational model with c′ cut (constrained to zero in SEM) will fit less well than the total model, but should not be substantially worse than the total model for mediation to be supported. The relationship can be described as partially mediated if the direct effect of the explanatory variable on the dependent measure is reduced but not negligible after including the mediator.

A. Unmediated relationship of X on Y



B.

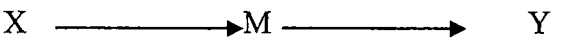


Direct Effect = c'

Mediated Effect = (a)(b)

Total Effect = c = c' + (a)(b)

C. Relationship of X on Y fully mediated by M



D. Chained or sequential mediation by M and N

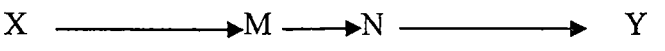


Figure 4.2 Path Diagram of Mediational contexts. A and B adapted from Baron & Kenny, (1986); and Frazier, Tix and Barron (2004).

According to Tabachnick and Fidell (2007) "There may be more than one mediator in a sequence..." (p. 160). It is possible for mediators to be chained or sequential as in Figure 4.2 D, where M mediates the effect of X on N and N mediates the relationship of M on Y (Frazier, Tix, & Barron, 2004; Kline, 2004).

In this thesis, SEM was chosen as the analysis method over the use of multiple regression analysis because SEM can control for measurement errors and provide information on the degree of fit for the entire model. More importantly, SEM can be used to analyse a more complicated model which includes multiple predictors, multiple outcomes, and multiple mediators (Frazier, Tix, & Barron, 2004) in a single analysis, instead of testing separate regression analyses.

As recommended by James and Brett (1984), our analyses used the complete mediation model, where this is hypothesised, as the baseline paradigm for mediation. Acceptable fit will be considered to empirically confirm the consistency of the hypothesised mediational model to the data. However, if the goodness-of-fit indices of the proposed complete meditation model fail to provide an adequate fit to the data and Modification Indices indicate that the model will fit substantially better with a direct relationship from antecedent to consequence, then partial mediation will be examined as a potential development of the model. Conversely if an assumed path is non-significant, the model with this path cut will be examined.

4.4 Results

4.4.1 Correlations

Pearson Correlations of Impostorism, Coping Styles, and Psychological Distress are shown in Table 4.1.

Table 4.1

Correlations of Impostorism, Coping Styles, and Psychological Distress

(N = 354)

		CIPS	Task-Oriented	Emotion-Focussed	Distraction	Social Diversion	Anxiety	Somatisation
Coping Styles	Task-Oriented	-.18**						
	Emotion-Focussed	.58**	-.26**					
	Distraction	.13*	-.17**	.23**				
	Social Diversion	-.14**	-.38**	-.03	.26**			
Psych Distress	Anxiety	.40**	-.20**	.51**	.15**	-.13*		
	Somatisation	.29**	-.17**	.43**	.14**	-.11*	.62**	
	Depression	.50**	-.23**	.61**	.17**	-.16**	.78**	.59**

Note. CIPS = Clance impostor phenomenon scale

* $p < .05$. ** $p < .01$.

Emotion-Focussed Coping is more strongly associated with the CIPS and with the Psychological Distress Indices: Somatisation, Anxiety, and Depression, while the correlations between the CIPS and the Psychological Distress indices are moderate to weak. This is consistent with the hypothesis that Emotion-Focussed Coping may mediate the slightly weaker relationships between the CIPS and the Psychological Distress indices.

The other coping styles: Task-Oriented Coping, Distraction, and Social Diversion coping have very weak associations with the CIPS and with the

Psychological Distress indices. Task-Oriented Coping and Social Diversion Coping are negatively associated with distress, and may have very weak protective effects. For Task-Oriented Coping, this may be largely accounted for by its weak negative association with Emotion-Focused Coping. Similarly, Distraction has very weak positive associations with the Distress Indices, possibly largely accounted for by its weak positive correlation with Emotion-Focussed Coping.

From the relationship between the CIPS and the CISS, Clance's (1985) suggestion that Impostors use avoidance coping can be rejected. The Avoidance coping styles on the CISS, Distraction and Social Diversion have very weak associations with the CIPS and these are in opposite directions leaving a negligible combined association. Instead it has been found that Emotion-Focussed Coping is the principal style of coping that is associated with impostor fears and with Psychological Distress. Therefore, it was decided that of the coping styles only Emotion-Focussed Coping warrants further consideration in the analysis of the relationship between Impostorism and Psychological Distress.

4.4.2 Structural Equation Modelling

The hypothesised model was tested. Consequences Structural Model 1 is presented in Figure 4.3. The model generated χ^2 (11, N = 354) = 37.52, $p < .001$, CMIN/DF =3.41, GFI = .97, CFI = .99, TLI = .97, and RMSEA = .08. It was concluded that the model was an acceptable fit for the data. As the structural model is saturated, and aside from effectiveness of split-halving, what is tested is how well the relationships of Anxiety, Depression, and Somatisation are accounted for by a single latent variable. Somatisation is less related than Anxiety and Depression to Psychological Distress.

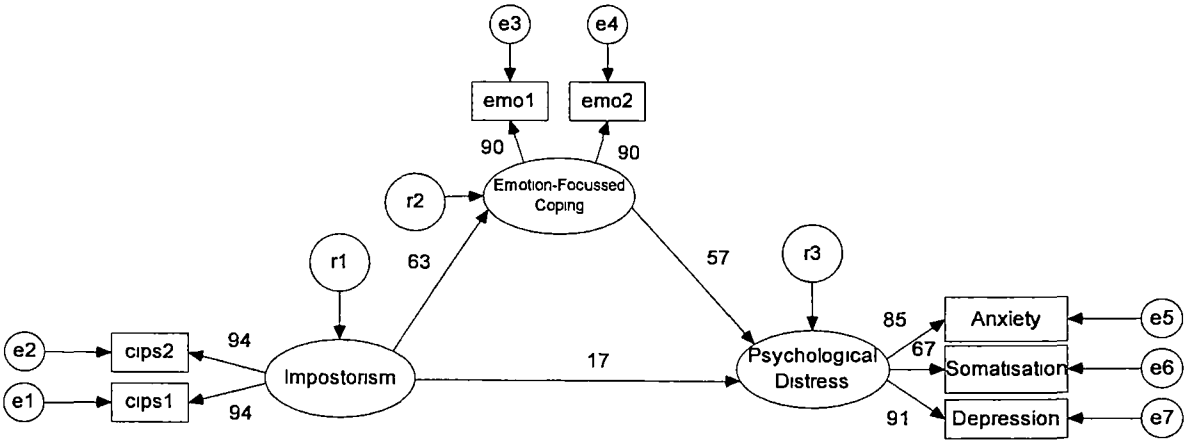


Figure 4.3 Consequences Structural Model 1

In relation to our hypothesis about the mediated effect of Emotion-Focussed Coping on the relationship between Impostorism and Psychological Distress, SEM results confirmed that Emotion-Focussed Coping was a partial mediator for the relationship between Impostorism and Psychological Distress. The direct effect of the path from Impostorism to Psychological Distress (which was .53, $p < .001$) was substantially reduced after including Emotion-Focussed Coping (to .17, $p < .05$). Impostorism and Emotion-Focussed Coping can account for 46% of the variance in Psychological Distress.

4.5 Discussion

The aims of these analyses were firstly to examine whether Anxiety, Somatisation and Depression can be treated as indices of general Psychological Distress. The results showed that Anxiety and Depression as measured by the SCL-90-R are highly correlated with each other, and somewhat less correlated with Somatisation. It is, therefore, appropriate to use them as indices of Psychological Distress, associated with Impostorism and Emotion-Focused Coping in the present analyses.

The relationship between Impostorism and Psychological Distress is consistent with the previous clinical observations and research (e.g. Bernard et al., 2002; Chae et al., 1995; Henning et al., 1998). The moderate relationship of impostor fears with Anxiety and Depression also supported the suggestion of Bernard et al. (2002) that Impostors are predisposed to experience anxiety and depressive symptoms. In this analysis the relationship between Impostorism and Depression was slightly stronger than that between Impostorism and Anxiety. In modelling this is interpreted as Depression loading slightly more highly than Anxiety on Psychological Distress. Somatisation is less strongly loaded on Psychological Distress, and less related to Impostorism and Emotion-Focussed Coping.

Emotion-Focussed Coping was found to have the strongest relationship with Impostorism. This suggested that Impostors deal with stressful situations by focusing on emotional responses, self-preoccupation and fantasising. These emotion coping techniques are similar to Clance's (1985) description in her clinical anecdotes, that Impostors focus on their doubts and imperfections, and/or their failure to meet perceived standards. They tend to catastrophise, focusing on the emotional reactions of their catastrophic thoughts. The use of emotion-focussed coping limits the ability of Impostors to deal with the problem actively by using task-oriented coping or reaching out to friends and family to get emotional support. Since the effect of Impostorism on Psychological Distress is largely mediated by Emotion-Focussed Coping, it suggests that the uses of Emotion-Focussed Coping in Impostors may strengthen negative affects, which are hypothesised as consequences of Impostorism.

CHAPTER 5

Antecedents and Consequences of Impostorism

5.1 Introduction

This chapter combines the final Antecedents Structural Model of Impostorism (Figure 3.4 in Chapter 3) and the Consequences Structural Model of Impostorism (Figure 4.3 in Chapter 4) from the previous analyses to investigate the role of Impostorism as a mediator between its antecedents and consequences.

5.1.1 Antecedents of Impostorism

The analysis of the antecedents of Impostorism in Chapter 3 showed that Mixed Messages from Family (MMF), Self-Oriented Perfectionism (SOP) and Socially Prescribed Perfectionism (SPP) may contribute to the emergence of Impostorism. These variables may also contribute to psychological distress which is measured in this analysis in terms of anxiety, somatisation and depression.

Parental rearing style and family environment have been found to be associated with psychological distress. Studies have found relationships between parental support, child-rearing style and authoritarian personality of parents with anxiety and depression in adolescence or in adults (Silverman, Ginsburg, & Kurtines, 1995; Lau & Kwok, 2000, Rapee, 1997). However, the link between mixed messages about achievement from family and psychological distress has not been established. Since mixed messages about achievement and non-contingent evaluative feedback from family members can leave individuals with

feelings of self-doubt and uncertainty, these mixed messages may directly contribute to psychological distress.

The research supporting the relationship between perfectionism and psychological distress is well supported by research. Due to unrealistic standards, perfectionists are exposed to a greater number of stressful and failure situations than non-perfectionists. This can explain the tendency to experience anxiety and depression among perfectionists. The relationship between perfectionism and general anxiety (Minarik & Ahrens, 1996) as well as links with anxiety traits (Flett, Hewitt, Endler, & Tassone, 1994; Juster, Heimberg, Frost, Holt, Mattia, & Faccenda, 1996) in nonclinical samples has been reported. In Mor, Day, Flett, and Hewitt's (1995) study of a group of professional artists, it was found that SOP and SPP are related to performance anxiety. SOP and SPP have also been associated with depressive symptoms in nonclinical populations (Flett, Hewitt, Blankstein & O'Brien, 1991; Wyatt & Gilbert, 1998).

5.1.2 Consequences of Impostorism

The results from the previous analysis of the consequences of Impostorism (Chapter 4) showed Emotion-Focussed Coping is the coping style that is most related to Impostorism and Psychological Distress. However, the relationship of MMF, SOP, and SPP on Emotion-Focussed Coping is not established. The relationship of Emotion-Focussed Coping with SOP in a female psychiatric sample and with SPP in a male psychiatric sample had been found in a study by Hewitt, Flett, and Endler (1995) but the link of SOP and SPP on Emotion-Focussed Coping in a general population has not been established. It is possible that MMF, SOP, and SPP could contribute to Emotion-Focussed Coping.

However, in the present analysis these contributions on Emotion-Focussed Coping and on Psychological Distress are hypothesised to be mediated by Impostorism.

5.1.3 Testing Mediator Effects of Impostorism and Coping Style

As discussed above, direct relationships between some antecedents and consequences of Impostorism have been reported. However, to provide better understanding of changes in dynamics of antecedents and consequences of Impostorism, there is the need to consider mediated effects of Impostorism and Emotion-Focussed Coping. By conducting a simultaneous multiple mediation analysis this includes the effect of each mediator while controlling for the other mediation.

5.2 Aim and Hypothesis

The analysis aims to explore the dynamics of Antecedents and Consequences of Impostorism. It is hypothesised that the contribution of MMF, SPP, and SOP on Emotion-Focussed Coping and psychological distress will be fully mediated by Impostorism. Hypothesised Antecedents and Consequences Model of Impostorism are illustrated in Figure 5.1. All direct paths from antecedents to consequences of Impostorism were constrained to be zero and omitted from the presented Figure.

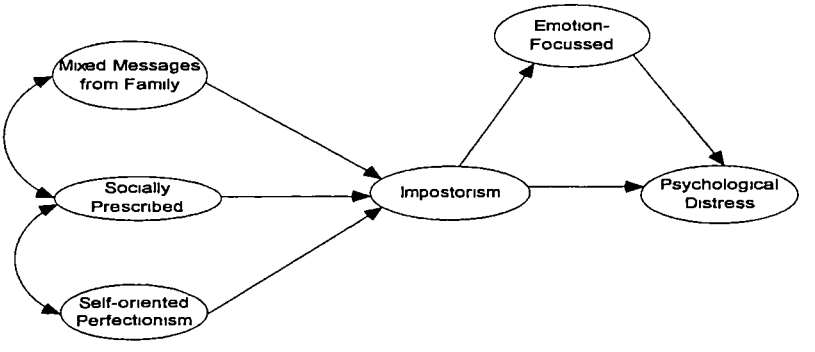


Figure 5.1 Hypothesised Antecedents and Consequences Model of Impostorism

5.3 Results

5.3.1 Correlations

A summary of the correlations for MMF, SOP, SPP, CIPS, Emotion-Focussed Coping, Anxiety, Somatisation, and Depression are shown in Table 5.1.

Table 5.1

Correlations between Mixed Messages from Family, Self-Oriented Perfectionism, Socially-Prescribed Perfectionism, Impostorism, Emotion-Focussed Coping, and Psychological Distress (N = 354)

	MMF	SOP	SPP	CIPS	Emotion-Focussed Coping	Anxiety	Somatisation
SOP	.09						
SPP	.47**	.40**					
CIPS	.51**	.34**	.54**				
Emotion-Focussed Coping	.33**	.24**	.40**	.58**			
Anxiety	.29**	.20**	.38**	.40**	.51**		
Somatisation	.22**	.11*	.33**	.29**	.43**	.62**	
Depression	.33**	.15**	.44**	.50**	.61**	.78**	.59**

Note. MMF = mixed messages from family; SOP = self-oriented perfectionism; SPP = socially prescribed perfectionism; CIPS = Clance impostor phenomenon.

* $p < 0.05$. ** $p < 0.01$.

As discussed in the previous analyses (chapter 3 and 4), the CIPS had moderate positive relationship with the hypothesised antecedent variables, namely, MMF, SOP, and SPP. Weak to moderate positive relationships of the CIPS with Somatisation, Anxiety, and Depression were also reported. The CIPS was also strongly related to Emotion-Focussed Coping. In addition, there were some weak to moderate relationships between hypothesised antecedents and hypothesised consequences of Impostorism. However, these relationships may be mediated by the CIPS.

5.3.2 Structural Equation Modelling

The hypothesised model was tested. The Antecedents and Consequences Model 1 is shown in Figure 5.2. The model generated: χ^2 (57, N = 354) = 132.30, $p < .001$, CMIN/DF = 2.32, GFI = .95, CFI = .98, TLI = .97, and RMSEA = .06. Although fit indices of the Antecedents and Consequences Model 1 were acceptable, Modification Indices suggested that the model could be improved by adding a path from Socially Prescribed Perfectionism to Psychological Distress.

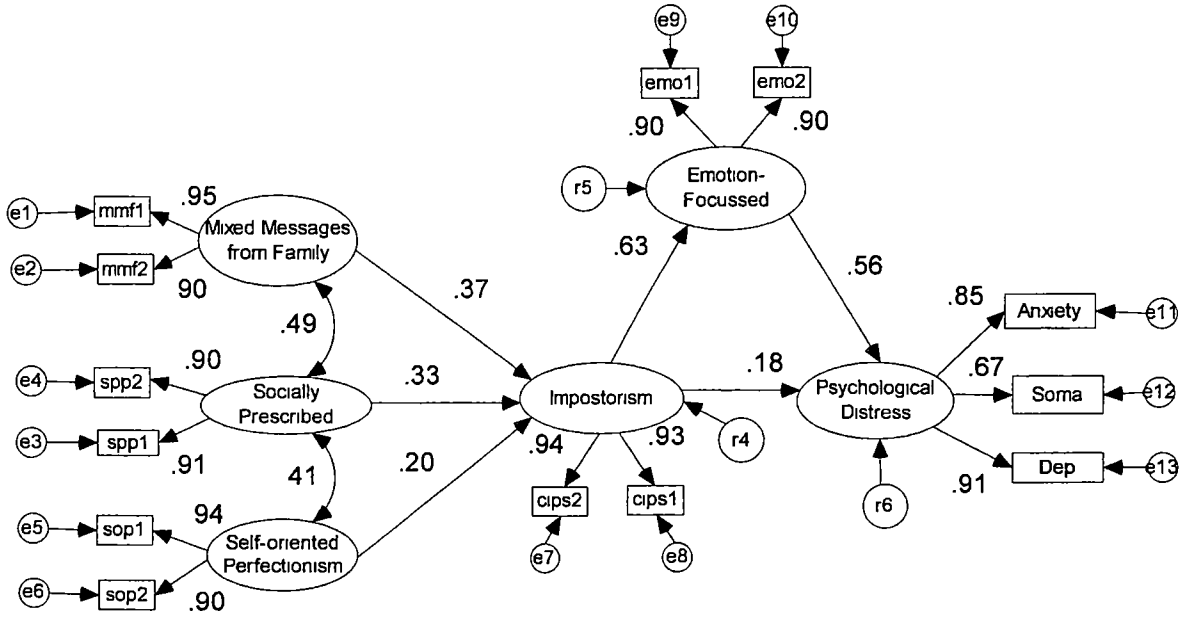


Figure 5.2 Structural Antecedents and Consequences Model 1

Adding a direct path from SPP to Psychological Distress suggests that SPP has a specific association with distress beyond its contribution via Impostorism and appears consistent with previous interpretations (e.g., Flett, Hewitt, Endler, & Tassone, 1994; Juster, Heimberg, Frost, Holt, Mattia, & Faccenda, 1996; Minarik & Ahrens, 1996). This revised model generated χ^2 (56, N = 354) = 117.21, $p <$ .001, CMIN/DF = 2.09, GFI = .95, CFI = .98, TLI = .98, and RMSEA = .06.

However, after adding the path from SPP to Psychological Distress, the path from Impostorism to Psychological Distress became statistically non-significant and was deleted from the model to give Structural Antecedents and Consequences Model 2, shown in Figure 5.3. The model generated χ^2 (57, N = 354) = 117.58, $p <$ .001, CMIN/DF = 2.06, GFI = .95, CFI = .98, TLI = .98, and RMSEA = .06.

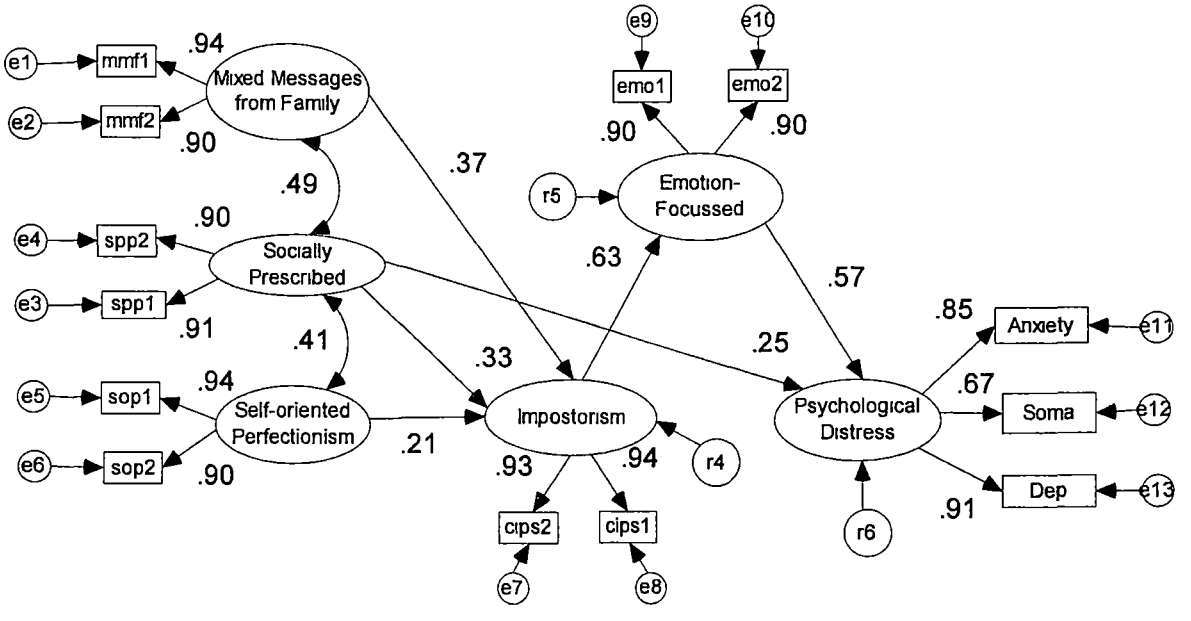


Figure 5.3 Structural Antecedents and Consequences Model 2

5.4 Discussion

When combining the separate antecedent and consequences models, Structural Antecedent and Consequences Model 1 (Figure 5.2) obtain an adequate to good fit. Therefore, Impostorism can be seen as entirely mediating the relationship between its hypothesised antecedents: MMF, SPP and SOP and its hypothesised consequences: Emotion-Focused Coping and Psychological Distress indexed by Depression, Anxiety and Somatisation, and Emotion-Focused Coping partly mediates the relationship of Impostorism with Psychological Distress.

However there is a significant direct path from one antecedent, SPP, to one consequence, Psychological Distress. If the path from SPP to Psychological Distress is included in the Model then the weak direct path from Impostorism to Psychological Distress becomes non-significant. If this non-significant path is deleted to give Structural Antecedents and Consequences Model 2 (Figure 5.3), the fit is very marginally improved. Thus an alternative interpretation of this data is that Impostorism largely mediates the relationship between its hypothesised antecedents and consequences, with the qualification that SPP has a weak additional direct contribution to distress and if this is included the relationship between Impostorism and distress is entirely mediated by Emotion-Focussed Coping.

CHAPTER 6

Discussion

This thesis focussed on trait Impostorism, derived from Clance's Impostor Phenomenon, and its relationships with mixed messages about achievement from family, aspects of perfectionism, coping styles, and psychological distress. It hypothesised mixed messages about achievement from family and perfectionism as antecedents of Impostorism, though as a correlational study it cannot establish causal direction. Coping styles and psychological distress were hypothesised as consequences. Structural Equation Modelling (SEM) was used to test the hypothesised antecedents and consequences models of Impostorism, and to illustrate the patterns evident in the correlations.

6.1 Limitations of the present research

A cross-sectional correlational study can only interpret the pattern of relationships between variables, it cannot establish causal direction. The sample is restricted to university students and is predominantly female, which limits the generalisability of conclusion. Comparing to non-academic populations, a university population may exhibit a greater degree of achievement motivation since they are constantly confronted by both direct and objective forms of performance evaluation, which may increase the tendency for students to experience impostor fears. Consequently findings may not be generalisable to those outside university because individuals outside academic settings are not

necessarily being consistently tested on the acquisition of new skills, but rather performing skills at the level that they have already achieved or have specialised skills which defy assessment and comparison. Another limitation associated with the current sample is the selection method as it relied on a volunteer sample. Imbalance between female and male participants may over-represent the occurrences or severity of Impostorism in this sample because females tend to be more introspective, self-reflective and more inclined to participate in the research than males. Further research comparing university with general samples and male with female samples would be needed to quantify the effects of sample restriction.

The relationships considered cover the range of the CIPS within this sample from low to high. If the prevalence of clinical Impostor Phenomenon, which is the basis for Clance's research, is about 5% then these make only a minor contribution to the relationships studied. It is considered preferable to refer to the attribute or trait underlying the scale over its range as Impostorism, and to reserve the term Impostor Phenomenon for the small subgroup with very high or clinical levels. Relationships over the range of the CIPS cover those who are below average as much as those above. As the CIPS uses mainly true/not true self-attributions of the Impostor Phenomenon statements, the interpretation of very low scores is unclear, it would be sufficient to decisively reject Impostorism, but low scores are likely to include those who feel the reverse, that their worth is underappreciated. However, this issue is beyond the scope of this study and cannot be resolved in this thesis. Further research with a much larger sample would be valuable to test the Antecedents and Consequences Model of Impostorism across at different levels of the spectrum of Impostorism.

6.2 Hypothesised antecedents

The results from the antecedents of Impostorism analysis (chapter 3) showed that Mixed Messages from Family (MMF) and Socially Prescribed Perfectionism (SPP) are moderately correlated with Impostorism and with each other. Self-oriented Perfectionism (SOP) was moderately correlated with SPP and Impostorism, but not with MMF.

MMF and SPP can each contribute significantly to the prediction of Impostorism. SOP additionally contributed to the prediction of Impostorism; however, the contribution of SOP is smaller than those of MMF and SPP. The contributions of MMF, SPP, and SOP together can account for 46% of the variance in Impostorism (Antecedent Structural Model 1, Figure 3.4 in chapter 3).

Other-Oriented Perfectionism (OOP) was not related to Impostorism. This supports rejecting the hypothesis that Impostorism is related to general perfectionism, and concluding that Impostorism is related to aspects of perfectionist expectations that apply to the self, attributed more strongly to social prescription but also including their own expectations.

6.2.1 Family Features

MMF refers to messages about achievement from the family that are inconsistent and confusing. MMF also includes characteristics of feedback given by the family that are irrelevant to the achievement outcomes (Thompson, 2004). If the self-reported perception of MMF is valid and is prior to Impostorism, MMF could be contributing to the development of impostor fears. This finding is consistent with the suggestion of Langford and Clance (1993) that providing a child with reinforcement which is irrelevant to the achievement outcomes contributes to the development of Impostorism. Non-contingent feedback from

family can promote uncertain self-esteem and engender uncertainty about the cause of achievement outcomes (Thompson, 2004). Another element of MMF, inconsistent messages about the importance of academic achievement and a lack of explanation of how to be successful, can increase the level of anxiety and leave a person feeling uncertain about their ability to achieve (Thompson, 1999). These elements of MMF may explain the self-doubts and hesitation to internalise success which are important characteristics of Impostorism.

Previous studies related to the development of Impostorism found that specific types of family environment and parenting styles, including lack of family cohesion, emphasis on achievement orientation, high anger expression, and high parental control (Bussotti, 1990; King & Cooley, 1995; Sonak & Towell, 2001), contributed to the emergence of Impostorism. However, the effects of these family factors on Impostorism were relatively small. For example, in Bussotti's (1990) study, a lack of family cohesion and high level of family control together could account for 12% of the variance in Impostorism. King and Cooley (1995) found a small correlation between family achievement orientation and Impostorism (r = .21). In this study, Family Achievement Value (FAV) has little relationship to MMF and Impostorism, although FAV was not adequately elaborate. Our findings suggest that mixed messages about achievement may play a more important role in relation to the emergence of Impostorism than family achievement values and those other family factors reported to have weak effects which may serve only to exacerbate Impostorism (Thompson, 2004) or be mediated by associations with mixed messages about achievement from family.

6.2.2 Perfectionism

Perfectionism has been recognised as a major component of Impostors' personality (Clance, 1985; Kets de Vries, 2005) and cognition (Thompson et al., 2000). Clance (1985) asserts perfectionism is one of the most important characteristics, contributing to and maintaining the Impostor Phenomenon. This study uses multidimensional perfectionism to add more detail to the development of Impostorism by clarifying the source and the target of perfectionism. The analysis of the antecedents of Impostorism (chapter 3) showed that the contributions of perfectionism on Impostorism are specifically from SPP and SOP, but not OOP.

From clinical observations, Clance (1985) reflected that Impostors "...yearn to be special and often secretly wish to be a genius... due to their need to be the best, Impostors are very perfectionistic in almost every aspect of their performances" (p. 26). Clance's observations seemed to imply that the source of perfectionism was originally from the person's self and the target of perfectionism was projected toward oneself. However, this study found that Impostorism is more related to Impostors' perception of social expectation (SPP) than to their need to satisfy their own expectation (SOP), and was not related to the expectation of perfection applying to others (OOP). This is consistent with the assertion from Cromwell et al. (1991) that Impostors had a need to be perfect in order to gain approval from others more than non-Impostors. SPP may play a major role in Impostors' cognition to serve a process of self-validation and maintaining their sense of self-worth. SPP might normally seem to apply standards to others as well as the self, though the correlation in this sample with OOP is not strong, r =.32. If the negligible correlation of OOP with Impostorism is confirmed it might imply

that the target of perfectionistic social expectations assumed by Impostors is the self as a special case.

SOP and SPP may play an important role in influencing and maintaining some important characteristics of Impostorism such as dismissing positive feedback and feeling shame and guilt about success. The need to perform flawlessly in order to reach a perfectionistic standard, imposed either by oneself or from others, causes high level of psychological distress in Impostors when they could not meet their own and/or socially expected standards (Clance, 1985; Imes, 1983; Kets de Vries, 2005). One explanation may be that Impostors interpret achievement-related situations in the cognitive frame of perfectionism and then reject positive feedback that does not agree with their perfectionist beliefs. Since Impostors often experience doubts about their own competence and are not satisfied with their achievement outcomes, positive feedback therefore may backfire on the Impostors making them feel guilt and shame about the socially recognised but not self-accepted success.

However if perfectionism leads to dismissing positive feedback, then this might lead to a perception of mixed messages from family by Impostors, not because their family's feedback is inconsistent in itself, but because it is inconsistent with their own self-oriented perfectionistic expectation.

Some studies suggested that SOP can be seen as an adaptive form of perfectionism (Flett & Hewitt, 2002; Hamachek, 1978; Kilbert, Langhinrichsen-Rohling, & Saito, 2005). Frost, Marten, Lahart, and Rosenblate (1990) found that there are some adaptive aspects of SOP and OOP. Later studies supported Frost's finding that SOP can be adaptive, while SPP is the only form of perfectionism that is generally maladaptive (Flett & Hewitt, 2002; Hamachek, 1978; Kilbert et al.,

2005). Kilbert et al. (2005) distinguished types of perfectionism by using the combination of SOP and SPP scores, resulting in four types of perfectionism, including 1) Low SOP –Low SPP, 2) High SOP only, 3) High SPP only, and 4) High SOP-High SPP. Their study found that SOP was associated with high level of self-control and achievement motivation, while SPP was related to higher level of depression, anxiety, shame and guilt, and suicidal tendency. Kilbert et al. (2005) drew the conclusion that a self-imposed high standard without pressure from others can increase self-motivation, encourage the sense of self-control and enhance self-esteem. However attempts to satisfy externally imposed high standards regardless of one's level of SOP, may increase the risk of experiencing psychological distress and psychopathology.

If SOP is viewed as adaptive form of perfectionism, it would emphasise SPP as the form of perfectionism that contributes to the genesis of maladaptive Impostorism. However, from the antecedents and consequences of Impostorism analysis (chapter 5), this study found small positive correlations between SOP and the psychological distress measures of anxiety, somatisation, and depression. Hamacheck (1978) claimed that perfectionism can be classified into two major categories, which are normal and neurotic perfectionism. The SOP trait that contributes to the antecedents of Impostorism in this study may have some maladaptive or neurotic elements but is less maladaptive than SPP.

6.3 Hypothesised consequences

6.3.1 Coping Style

The analysis of hypothesised consequences of Impostorism (chapter 4) also found a strong relationship of Impostorism with Emotion-Focussed Coping,

while Impostorism was negligibly related to other coping styles on the CISS. The aspect of emotion-focussed coping may be overlooked in the literature on Impostorism. Catastrophising about achievement situations, focusing on negative emotions, preoccupation about their imperfections, and blaming themselves for not being able to deal with the situations as much as they expected are elements of emotion-focussed coping reported for Impostors. However, Clance (1985) also suggests avoidance behaviours, such as procrastination and avoiding more responsibilities, as strategies used by Impostors to cope with stressful situations, particularly with achievement-related tasks. Lefkowitz (2003) found avoidance coping mediated between Impostorism and college adjustment. The measure of coping strategy, the Coping Strategy Indicator (CSI: Amirkhan, 1990), used in Lefkowitz's (2003) study defined avoidance coping as the use of physical and psychological withdrawal such as fantasy or distraction, while the CISS used in this thesis defines avoidance coping from more behavioural distraction and social diversion. Perhaps items from Avoidance Coping from the CSI could partially overlap with the Emotion-Focussed Coping subscale of the CISS in the use of psychological distraction such as day dreaming and fantasy for emotion coping. However, the results in this thesis showed that CISS Distraction was negligibly associated with Impostorism, $r = .13$, and Social Diversion negligibly and negatively associated, $r = -.14$.

The analysis of consequences of Impostorism (chapter 4) found a moderate relationship between Emotion-Focussed Coping and Psychological Distress. Many previous studies report that Emotion-Focussed Coping is associated with poorer adjustment such as symptoms of depression and anxiety, neuroticism and general dissatisfaction (Beasley et al., 2001; Higgins & Endler, 1995; Stanton, Parsa, &

Austenfeld, 2002). However, the causal direction of Emotion-Focussed Coping and Psychological Distress is debatable, as it is plausible that distress may require, or strongly dispose to, coping with negative emotions. The relatively high correlations between Emotion-Focussed Coping and the measures of Psychological Distress in this study raise the question of whether the items used for Emotion-Focussed Coping in the CISS may overlap with those for Depression and Anxiety.

The Emotion-Focussed Coping subscale in the CISS has been criticised for its confounded operationalisation (Stanton, Danoff-Burg, Cameron, & Ellis, 1994). The content of coping items, such as *become very tense, focus on my general adequacy* may reflect aspects of psychological distress. The CISS Emotion-Focussed Coping scale does not include attempts to acknowledge, understand and express emotions surrounding the stressful situation appropriately (Stanton et al., 1994), which is perceived to be a more adaptive form of emotion-focussed coping. The CISS Emotion-Focussed Coping subscale may reflect emotional concerns, rather than a coping strategy.

The contribution of Impostorism and Emotion-Focussed Coping together in the Antecedents and Consequences model could account for 46% of the variance in psychological distress in this sample.

6.3.2 Psychological Distress

Henning et al. (1998) found that Impostorism was better than perfectionism and demographic factors such as age, sex, and marital status in predicting level of psychological distress. This thesis used the SCL-90 subscales for Anxiety, Somatisation, and Depression as measures of Psychological Distress,

hypothesised as a consequence of Impostorism, and found that they were more related to Impostorism than perfectionism.

However, several studies relating Impostorism and the NEO-P-R model (Bernard et al., 2002; Chae et al., 1995; Chrisman et al., 1995; Ross et al., 2001) include anxiety and depression as facets of neurotic personality. Personality measures are generally intended as stable dispositions, implying they act as a cause rather than a consequence. Clearly, there is an issue of causal direction, and of whether anxiety, for instance, as a predisposing aspect of personality can be distinguished from anxiety as a clinical consequence of maladaptive coping, which this study was not designed to address.

6.4 Antecedents and Consequences of Impostorism

Combining the antecedents and consequences models (chapter 5) showed that Impostorism can completely mediate the relationships of its antecedents, MMF, SOP, and SPP on its consequences, Emotion-Focussed Coping and Psychological Distress (Figure 5.2, Structural Antecedents and Consequences Model 1).

This analysis also suggested an alternative Antecedents and Consequences model of Impostorism by allowing a path from SPP to Emotion-Focussed Coping, so Impostorism only partly mediates the relationships between antecedents and consequences. Burns and Fedewa (2005) speculated that the maladaptive form of perfectionism is likely to associate with a maladaptive style of coping, while positive perfectionism is related to an adaptive form of coping. SPP, which is considered as a maladaptive form of perfectionism, has been found associated with less adaptive coping style (Flett, Russo, & Hewitt, 1994), negatively related

to problem solving orientation (Flett, Hewitt, Blankstein, Solnik, &Van Brunschot, 2006), and associated with a low level of comfort in help seeking behaviour (Hewitt & Flett, 2002), so a direct contribution from SPP to Emotion-Focussed Coping is consistent with other research.

Hewitt, Flett, and Endler (1995) reported a link between SPP and the CISS Emotion-Focussed Coping in male psychiatric patients, while, in female psychiatric patients, SPP was negatively associated with the CISS Social Diversion. However, it would not be appropriate to generalise the finding of Hewitt et al. (1995) in a male psychiatric sample to the predominantly female university sample used in this study.

By allowing the path from SPP to Emotion-Focussed Coping, CISS Emotion-Focussed Coping can entirely mediate the effects of MMF, SOP, SPP, and Impostorism on Psychological Distress (Structural Antecedents and Consequences Model 2, Figure 5.3).

6.5 Recommendations for further research

The findings from this research enhance understanding to the relationships of MMF, SPP, SOP, Emotion-Focussed Coping, and Psychological Distress with Impostorism. The study also suggests some issues needing clarification and replication, and some directions for further research.

Since the assessment of Impostorism relies on the test used, some refinement of the problematic items of the CIPS is desirable to avoid each study making its own adjustments. It has been repeatedly found that items one and two of the CIPS have low inter-item total correlation and low communality, the content of these two items should be revised or they should be deleted.

The Mixed Messages about Achievement Scales (MMAS) is a useful measure to identify a perception of confusing messages about achievement in the family and inconsistent and irrelevant reinforcements received from the family (Mixed Messages from Family: MMF) and family achievement values (Family Achievement Values: FAV). Mixed messages from family appear more strongly associated with Impostorism than family achievement values. Further research would benefit from development of the MMAS to clarify the nature and source of confusing messages within the family. For context it may be desirable to expand the Family Achievement Values component, adding more items so that it is adequately assessed.

The focus of this thesis has been limited to testing an antecedents and consequences model of Impostorism for a small number of possible variables, mainly adding mixed messages from family, components of perfectionism and coping styles. It was beyond the scope of this thesis to develop a more comprehensive model of antecedents and consequences of Impostorism. However, previous research suggests other factors, such as fear of failure and self-handicapping, are substantially related to Impostorism. It would be desirable to also include the contribution of aspects of personality, such as components of neuroticism, which are likely to contribute to the development of psychological distress, and the development of Impostorism.

The use of another measure for coping styles, beside the CISS, is recommended to clarify the role of emotion-focussed coping in relation to Impostorism and psychological distress. It would be desirable to explore potential positive aspects of emotion focused coping to ensure it is not confounded with psychological distress.

In this thesis, Impostorism is treated as a stable personality-type trait that developed from childhood and influences a person's cognition and behavior when dealing with achievement-related situations. However, Pirotsky (2000) found two forms of Impostorism, including a trait-like form and a non-enduring form, which Pirotsky suggests is more dependent on situational pressures or ambiguity. To clarify the distinction between enduring and situational Impostorism, future research would benefit from a longitudinal component, especially covering a period of transition or adjustment, such as from school to university. Retrospective questions about ambiguity in the family might be supplemented by questions about ambiguity in the current situation. Another issue related to the stability of Impostorism is whether it can be substantially ameliorated by treatment, which deserves experimental study for its clinical application in any case.

Impostorism has been found in both males and females across different professions and educational settings. Since female university students are the majority of participants in the sample used in this thesis, further research is needed to test the model in a sample with adequate representation of males as well as a sample from different occupations to see whether the model can be generalised across gender, and different occupations.

While Clance's original work was based on clinical observation, most other research, including this study, were based on the self-report inventories. Self-report data reflect the perception of participants, so the results should be interpreted in this context. In this thesis, mixed messages about achievement from family were only explored from the participants' point of view. There may be some discrepancy between what participants, especially Impostors feel or believe

and the perception of others in the family. Ratings of mixed achievement messages in the family by parents or siblings may distinguish perception from family history as a causal factor on the development of Impostorism.

Relying only on the participants' self-report measures for all of the constructs may contribute shared variance among the correlations. The high correlations between Emotion-Focussed Coping measured by the CISS, Impostorism measured by the CIPS, and Psychological Distress measured by the SCL-90 were noted. These strong relationships may include some overlapping of the measurements. Further studies may benefit from the inclusion of assessments other than self-report measurements, where that is practicable, although Impostorism, as cognition about the self, requires self report.

6.6 Clinical Implications

An individual with impostor fears may appear successful and highly motivated to achieve, but they suffer with self-doubts, fears of being unable to keep up with the success and of being exposed as an intellectual fraud. People who experience impostor fears often suffer psychological distress with subclinical symptoms such as anxiety and depressed mood, while those who experience prolonged or intense episodes of impostor fears may become underachievers or incapacitated, and suffer from a clinical level of anxiety or depression. Henning et al. (1998) assessed the prevalence of impostor fears in 477 health professional students using the CIPS. They found 30.2 % of the sample population had CIPS score in the clinical level of Impostorism. Sonnak and Towell (2001) reported 43% of their university student sample (N = 107) rated the intensity of impostor fears in a clinical range, assessed by the CIPS. A more recent study by Oriel,

Plane, and Mundt (2004) in family medicine residents found 41% of female (N = 98) and 24% of male (N = 87) samples reported experiencing a clinical level of impostor fears on the CIPS. The interpretation of these results on the prevalence of a clinical level of Impostorism should be cautiously interpreted. The "clinical" level they used might better be described as high or above average. It is implausible that most of these would be seeking treatment or suffering substantial distress, unless the samples were highly stressed and unable to cope. In some cases high scores on the CIPS may be non-enduring or situational, aggravated by events around the time of assessment or personal circumstances or predisposing psychological problems which were not controlled. Although, the number of people who have a sustained clinically significant level of Impostorism is debatable, the results of many studies (e.g., Henning et al., 1998; Sonnak & Towell, 2001) suggest the prevalence of impostor fears varies across ages, gender and occupation. There is a need to consider interventions that may prevent a non-psychopathological experience from progressing to a clinically significant level, as well as treatments for those who have experienced an intense level of Impostorism or serious consequences.

The findings suggest that intervention for Impostorism may include both prevention and treatment strategies that occur at the family level, social level, and individual level. At the family level, Family Therapy may address aspects of mixed messages from family and focus on altering the perception of non-contingent feedback from parents, as well as promote clear and consistent communication about the importance of achievement. Including issues related to Impostorism and mixed messages about achievement from family into a parental training program to help parents recognise any pattern of non-contingent feedback

and the inconsistencies in the communication about achievement in the family may promote behavioural change in the families of children at risk of Impostorism. However Impostorism is not normally diagnosed in children and it is not clear that individuals at risk of developing it can be identified or would seek intervention.

At the social level, group therapy could be implemented at a university or at school for students who experience impostor fears, or workshops could be arranged to educate students about Impostorism and its relationship with both self-oriented perfectionism and socially prescribed perfectionism. However, it may be more appropriate to focus the treatment at individual level when individuals seek treatment.

At the individual level, Cognitive Behavioural Therapy (CBT) is suggested as the treatment of choice for Impostorism because it is structured, active, strategic, employs a constructive model of thought and behaviour in treating target problems, and is time limited (Freeman & Reineck, 1995). In addition, CBT has been shown to be effective in treating many psychological problems, particularly anxiety and depression which are associated with Impostorism. The present study has suggested that Impostorism is associated with more stable cognitive schemata in which perfectionistic expectations are directed to the self as a special case. A treatment focussed only on alleviating psychological distress symptoms may not be the most effective approach because it does not alter the perfectionism traits and their cognitive schemata, which are proposed as the source of core beliefs contributing to psychological distress. Results from the present study suggested that socially prescribed perfectionism and emotion-focussed coping in relation to

impostor fears and psychological distress should be addressed in the treatment of Impostorism.

Assessment for CBT should be based on understanding the patterns of thinking of Impostors (Corey, 2001). Attention should be paid to irrational beliefs and cognitive distortions that have been developed and incorporated in relation to impostor fears and achievement situations. In addition, the assessment should also review their relevant developmental issues, family dynamics, social history, medical and psychiatric history (Freeman & Reineck, 1995). This information is useful for clarifying presenting complaints, such as depressed mood or anxiety, into a working problem list and treatment formulation, which assist clinicians and clients in developing concrete therapeutic goals, a time frame for the therapy, and guidelines to assess the therapeutic outcomes.

The general goals of treatment for Impostorism are to enable Impostors to reach their full potential, to reduce their dependence on others' evaluations (Langford & Clance, 1993), and to obtain personal satisfaction from their accomplishments. These goals can be achieved by using cognitive, affective, and behavioural techniques to help impostors critically identify their irrational beliefs (e.g. perfectionistic standards, catastrophic thinking) and destructive behaviours (e.g., the use of emotion-focussed coping, working pattern that alternates procrastination and overworking behaviours), actively challenging these irrational beliefs and behaviours, and substituting with constructive ones (Corey, 2001). Cognitive techniques include the use of psycho-education, thought monitoring, thought challenging, and cognitive reconstructuring. Affective techniques include role playing and relaxation training. Behavioural techniques include practical behaviour procedures such as time management and assertiveness skill training.

The present study found that Emotion-Focussed Coping as assessed by the CISS emerged as a major coping style used by Impostors and mediated the relationship between Impostorism and Psychological Distress. This suggests another possible therapeutic focus on constructive coping styles might reduce the psychological distress, without necessarily reducing the impostor fears, if the proposed casual sequence is valid.

Clance and Imes (1978) suggested that Eclectic therapy, which combines several therapeutic approaches, is the most effective treatment for Impostorism. This approach combines several therapeutic approaches such as Client-centred therapy, Gestalt therapy, Psychoanalysis, Behavioural therapy, and Cognitive therapy to deal with different problems associated with impostor fears. For example, Client-centred therapy is used for problem formulation and building rapport, Gestalt therapy such as the hot seat technique is used to help Impostors confront their fears of success and bring their hidden fantasy into the consciousness level (Clance & Imes, 1978). Currently, aside from the work of Clance and her associates (Clance, 1985; Clance & Imes, 1978; Matthews & Clance, 1985), there are no structured treatment guidelines for Impostorism or research exploring the effectiveness of treatments on Impostorism.

Further research expanding understanding of the dynamics of Impostorism in relation to psychological distress, especially situational and trait-like impostor fears, would be valuable for developing more sensitive assessment measures of Impostorism and establishing structured treatment programmes for forms of Impostorism. Future clinical research should evaluate the treatment effectiveness of different psychotherapeutic approaches (e.g., Client-centred therapy, CBT,

Behavioural therapy, or Eclectic therapy) and compare the effectiveness of different treatments for Impostorism.

6.7 Conclusion

This correlational study of a university sample examined models for hypothesised antecedents and consequences of Impostorism measured by the Clance Imposter Phenomenon Scale.

The analysis of hypothesised antecedents of Impostorism found that Mixed Messages about Achievement from Family and Socially Prescribed Perfectionism could contribute most to the prediction of Impostorism, with somewhat less contribution from Self-Oriented Perfectionism, while Other-Oriented Perfectionism was not related to Impostorism. These findings emphasised that Impostorism was not related to perfectionism in general or perfectionistic expectation toward others. Impostorism was related to specific dimensions of perfectionism that stem from self-perfectionistic expectations and the perception of perfectionistic expectations from others. While not adequately assessed, it suggests that Family Achievement Values are not strongly related to Impostorism, consistent with King and Cooley (1995) who found a small relationship between family achievement orientation and Impostorism. It is possible that how the messages related to achievement values of the family and significant others are delivered was more important to the development of Impostorism.

The analyses of hypothesised consequences of Impostorism found CISS Emotion-Focussed Coping was the only coping style meaningfully related to Impostorism, while Task-Focussed Coping and Avoidance Coping, comprised of Distraction and Social Diversion, were negligibly related to Impostorism. These

findings did not support Clance's (1985) observation and previous research by Lefkowitz (2003) which suggested avoidance is a coping style used by Impostors. However, the items of the measurement for Avoidance Coping in Lefkowitz's (2003) study from the CIS may have some overlap with the items of CISS Emotion-Focussed Coping used in this study.

Emotion-Focussed Coping also appeared as a mediator of hypothesised consequences of Impostorism, which combined Anxiety, Somatisation, and Depression as a Psychological Distress index. However, the causal placement of Emotion-Focussed Coping in the hypothesised consequences model is debatable. The correlation between Emotion-Focussed Coping and Psychological Distress suggests that the Emotion-Focussed Coping subscale of the CISS may have a confounded operationalisation with psychological distress (Stanton, Danoff-Burg, Cameron, & Ellis, 1994). Also it is not clear whether coping styles should be seen as a consequence of Impostorism, maladaptive emotion-focussed coping with achievement stress may have contributed to the development of impostor fears.

The hypothesised antecedents and consequences models of Impostorism were combined to give models in which Impostorism mediated the relationship between the hypothesised antecedents and consequences. Two alternative models generate acceptable levels of fit, but cannot be distinguished with the data available.

The complete mediation model (Structural Antecedents and Consequences Model 1, Figure 5.2) shows Impostorism is sufficient to account for the relationships between the antecedents (MMF, SOP, and SPP) and the consequences (Psychological Distress mostly mediated by Emotion-focussed Coping). This supports the view that Impostorism is a valuable construct,

especially in accounting for the relationship between aspects of perfectionism and aspects of psychological distress.

The other model (Structural Antecedents and Consequences Model 2, Figure 5.3) allowed some direct contribution from SPP to Psychological Distress. This then allowed Emotion-Focussed Coping to entirely mediate the relationship between Impostorism and Psychological Distress. This interpretative alternative emphasises the role of Emotion-Focussed Coping as measured by the Coping Inventory for Stressful Situations (CISS) as a possible consequence of Impostorism leading to Psychological Distress.

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TABLE OF APPENDICES

Information Sheet

Impostor fears and Perfectionism

Chief Investigator: Dr. Ted Thompson
Masters Student: Jaruwan Sakulku

Purpose of the study

We would like to invite you to participate in study in examining links between perfectionism and impostor fears. In particular, the health consequences of each are examined in terms of somatic symptoms, anxiety and depression, as well as the coping strategies individuals high in either perfectionism or impostor fears use to cope in stress. The contribution of family messages about achievement is also examined as a factor contributing to impostor fears.

The study is being conducted as a part of the research component of a Doctor of Psychology degree (DPsych). As with many experiments in psychology, there is a limit to the amount of detail I can give you about the expected outcomes of the study at this stage. However, what I can give you is that links between impostor fears and perfectionism have been proposed.

Criteria for inclusion/exclusion

There are no particular criteria for inclusion in or exclusion from the study. All students are invited to participate.

What you will be asked to do

You will be asked to complete a number of scale measures that assess

- Imposter fears and perfectionism
- Coping style, somatic symptoms, depression, anxiety and coping
- Parental reinforcement and parental messages about achievement.

Duration of the study

The study will take approximately 45 minutes. You will be fully debriefed concerning the nature of the study and what it attempts to establish, including the reasons for the tasks you have been asked to complete before you collect the questionnaires. The debriefing process will take approximately 10 minutes.

Payment to participants

No payment will be made, however if you are a Psychology 1 student, you will receive participation credit to the value of one hour once the questionnaires are returned completed.

Possible risks or discomforts

It is possible (though unlikely) that in completing items that comprise one or a number of the scale measures used in this study that you may experience then as confronting, or that they will make to feel uncomfortable in some way. Such uncomfortable will be transitory. Otherwise, there are no known risks resulting from any procedures used in this study.

Debriefing Session

In the debriefing session at the conclusion of the study is detailed and explains the purpose of each of the scales you complete.

Information concerning the results of the study

Once data is collected and the results are analysed and the DPsych thesis written and submitted, a summary of the results will be posted on the School of Psychology Web page. This can be found at the following web site:
http://www.scieng.utas.edu.au/ResparticipFB.html

Freedom to refuse or withdraw participation in this study

Participation is purely voluntary. You are free to participate or withdraw at any time during the experiment without prejudice.

Anonymity

Anonymity is assured. The batch of questionnaire you complete will be identified by your gender and age information alone. All pen and paper data collected from you will be stored in a lock cabinet in the School of Psychology.

Contact persons

Any questions you may have regarding the study can be directed to researcher Jaruwan Sakulku, ph: (03) 6226 7664 or e-mail *jsakulku@postoffice.utas.edu.au* or the Chief Investigator Dr. Ted Thompson, ph: (03) 6226 2887 or by e-mailing *T.Thompson@utas.edu.au*. If following the debriefing that occurs at the conclusion of the study you remain concerned about the study, you may talk to the Chief Investigator or to an independent counsellor in the Psychology Clinic, ph: (03) 6226 2805.

Concerns or complaints

As to ethics approval, any concerns of an ethical nature can be directed to Human Research Ethics Committee (Tas) Network Associate Professor Gino Dal Pont, ph: (03) 6226 2078; or the Executive Officer, Mrs Amanda McAully, ph: (03) 6226 2763.

Statement of approval

This study has received ethical approval from the Human Research Ethics Committee (Tas) Network.

Thank you very much for your time and effort in participating in this study.

Mixed Messages about Achievement from Family Scale (Thompson &Dinnel, 2001)

Please consider each of the following statements. Using the scale below each item, circle the number to indicate the degree to which each statement is true for you.

	Not very true of me						Very true of me
1. Sometimes my family encourages me academically while at other times I am not encouraged.	1	2	3	4	5	6	7
2. In my family we feel it is important to do the best we can at whatever we do.	1	2	3	4	5	6	7
3. In our family, how one may achieve success academically is never really explained.	1	2	3	4	5	6	7
4. Getting ahead in life is very important in my family.	1	2	3	4	5	6	7
5. I am never completely sure whether my family believes in my academic ability.	1	2	3	4	5	6	7
6. I can never figure out whether my family genuinely supports me academically.	1	2	3	4	5	6	7
7. My family gives me mixed messages about my academic ability.	1	2	3	4	5	6	7
8. In my family, achievement is very important.	1	2	3	4	5	6	7
9. Based on feedback from my family, I'm often unsure whether or not I genuinely have ability.	1	2	3	4	5	6	7
10. In my family, success is frequently attributed to factors that are irrelevant.	1	2	3	4	5	6	7
11. In my family, achievement is not emphasised very much.	1	2	3	4	5	6	7
12. Based on feedback I receive from my family, I can never figure out whether my achievement is due to my ability or to some other factor.	1	2	3	4	5	6	7
13. In my family, we often try to out-do each other.	1	2	3	4	5	6	7
14. "Work before play" is the rule in my family.	1	2	3	4	5	6	7
15. Sometimes I receive praise from my family for my academic achievement, and sometimes I don't.	1	2	3	4	5	6	7
16. I feel I receive mixed messages about my ability to achieve.	1	2	3	4	5	6	7
17. Sometimes I feel my achievement is attributes to things that are irrelevant.	1	2	3	4	5	6	7

Clance Impostor Phenomenon Scale (CIPS): Clance (1985)

Please read each of the statements below carefully and assess the extent to which each statement is true of you. Using the scale to the side of each item, please *circle the number that corresponds to your choice.*

	Not at all true of me				Very True of me
21. I have often succeeded on a task even though I was afraid that I would not do well before I undertook the task.	1	2	3	4	5
22. I can give the impression that I'm more competent than I really am.	1	2	3	4	5
23. I avoid evaluations if possible and have a dread of others evaluating me.	1	2	3	4	5
24. When people praise me for something I've accomplished, I'm afraid that I won't be able to live up to their expectations of me in the future.	1	2	3	4	5
25. I sometimes think I obtained my present position or gained my present success because I happened to be in the right place at the right time or knew the right people.	1	2	3	4	5
26. I'm afraid people important to me may find out that I'm not as capable as they think I am.	1	2	3	4	5
27. I tend to remember incidents in which I have not done my best more than those times I have done my best.	1	2	3	4	5
28. I rarely do a project or task as well as I'd like to do it.	1	2	3	4	5
29. Sometimes I feel or believe that my success has been the result of some kind of error.	1	2	3	4	5
30. It's hard for me to accept compliments or praise about my intelligence or accomplishments.	1	2	3	4	5
31. At times, I feel my success was due to some kind of luck.	1	2	3	4	5
32. I'm disappointed at times in my present accomplishments and think I should have accomplished much more.	1	2	3	4	5
33. Sometimes I'm afraid others will discover how much knowledge or ability I really lack.	1	2	3	4	5
34. I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well at what I attempt.	1	2	3	4	5
35. When I've succeeded at something and received recognition for my accomplishments, I have doubts that I can keep repeating that success.	1	2	3	4	5
36. If I receive a great deal of praise and recognition for something I've accomplished, I tend to discount the importance of what I've done.	1	2	3	4	5
37. I often compare my ability to those around me and think that they may be more intelligent than I am.	1	2	3	4	5
38. I often worry about not succeeding with a project or an examination, even though others around me have considerable confidence that I will do well.	1	2	3	4	5
39. If I'm going to receive a promotion or gain recognition of some kind, I hesitate to tell others until it is an accomplished fact.	1	2	3	4	5
40. I feel bad and discouraged if I'm not "the best" or at least "very special" in situations that involve achievement.	1	2	3	4	5

Multidimensional Perfectionism Scale (Hewitt &Flett, 1989)

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you ***strongly agree, circle 7***; if you ***strongly disagree, circle 1***; if you feel ***somewhere in between, circle any one of the numbers between 1 and 7***. If you feel ***neutral or undecided the midpoint is 4***.

	Strongly Disagree						Strongly Agree
1. When I am working on something, I cannot relax until it is perfect.	1	2	3	4	5	6	7
2. I am not likely to criticise someone for giving up too easily	1	2	3	4	5	6	7
3. It is not important that the people I am close to are successful.	1	2	3	4	5	6	7
4. I seldom criticise my friends for accepting second best.	1	2	3	4	5	6	7
5. I find it difficult to meet others' expectations of me.	1	2	3	4	5	6	7
6. One of my goals is to be perfect in everything I do.	1	2	3	4	5	6	7
7. Everything that others do must be top-notch quality.	1	2	3	4	5	6	7
8. I never aim for perfection in my work.	1	2	3	4	5	6	7
9. Those around me readily accept that I can make mistakes too.	1	2	3	4	5	6	7
10. It doesn't matter when someone close to me does not do their absolute best.	1	2	3	4	5	6	7
11. The better I do, the better I am expected to do.	1	2	3	4	5	6	7
12. I seldom feel the need to be perfect.	1	2	3	4	5	6	7
13. Anything I do that is less than excellent will be seen as poor work by those around me.	1	2	3	4	5	6	7
14. I strive to be as perfect as I can be.	1	2	3	4	5	6	7
15. It is very important that I am perfect in everything I attempt.	1	2	3	4	5	6	7
16. I have high expectations for the people who are important to me.	1	2	3	4	5	6	7
17. I strive to be the best at everything I do.	1	2	3	4	5	6	7
18. The people around me expect me to succeed at everything I do.	1	2	3	4	5	6	7
19. I do not have very high standards for those around me.	1	2	3	4	5	6	7
20. I demand nothing less than perfection of myself.	1	2	3	4	5	6	7
21. Others will like me even if I don't excel at everything.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
22. I can't be bothered with people who won't strive to better themselves.	1	2	3	4	5	6	7
23. It makes me uneasy to see an error in my work.	1	2	3	4	5	6	7
24. I do not expect a lot from my friends.	1	2	3	4	5	6	7
25. Success means that I must work even harder to please others.	1	2	3	4	5	6	7
26. If I ask someone to do something, I expect it to be done flawlessly.	1	2	3	4	5	6	7
27. I cannot stand to see people close to me make mistakes.	1	2	3	4	5	6	7
28. I am perfectionistic in setting my goals.	1	2	3	4	5	6	7
29. The people who matter to me should never let me down.	1	2	3	4	5	6	7
30. Others think I am okay, even when I do not succeed .	1	2	3	4	5	6	7
31. I feel that people are too demanding of me.	1	2	3	4	5	6	7
32. I must work to my full potential at all times.	1	2	3	4	5	6	7
33. Although they may not show it, other people get very upset with me when I slip up.	1	2	3	4	5	6	7
34. I do not have to be the best at whatever I am doing.	1	2	3	4	5	6	7
35. My family expects me to be perfect.	1	2	3	4	5	6	7
36. I do not have very high goals for myself.	1	2	3	4	5	6	7
37. My parents rarely expected me to excel in all aspects of my life.	1	2	3	4	5	6	7
38. I respect people who are average.	1	2	3	4	5	6	7
39. People expect nothing less than perfection from me.	1	2	3	4	5	6	7
40. I set very high standards for myself.	1	2	3	4	5	6	7
41. People expect more from me than I am capable of giving.	1	2	3	4	5	6	7
42. I must always be successful at school or work.	1	2	3	4	5	6	7
43. It does not matter to me when a close friend does not try their hardest.	1	2	3	4	5	6	7
44. People around me think I am still competent even if I make a mistake.	1	2	3	4	5	6	7
45. I seldom expect others to excel at whatever they do.	1	2	3	4	5	6	7

Coping Inventory for Stressful Situations

Instructions: The following are ways people react to various difficult or stressful, or upsetting situations. **Please circle a number from 1 to 5 for each item. Indicate how much you engage in these types of activities when you encounter a difficult, stressful or upsetting situation**. There are 48 items in all.

Not at all				Very much	
1	2	3	4	5	1. Schedule my time better.
1	2	3	4	5	2. Focus on the problem and see how I can solve it.
1	2	3	4	5	3. Think about the good times I've had.
1	2	3	4	5	4. Try to be with other people.
1	2	3	4	5	5. Blame myself for procrastinating.
1	2	3	4	5	6. Do what I think is best.
1	2	3	4	5	7. Preoccupied with aches and pains.
1	2	3	4	5	8. Blame myself for getting into this situation.
1	2	3	4	5	9. Window shop.
1	2	3	4	5	10. Outline my priorities.
1	2	3	4	5	11. Try to go to sleep.
1	2	3	4	5	12. Treat myself to favourite food or snack.
1	2	3	4	5	13. Feel anxious about being able to cope.
1	2	3	4	5	14. Become very tense.
1	2	3	4	5	15. Think about how I should solved similar problems.
1	2	3	4	5	16. Tell myself that it is not really happening to me.
1	2	3	4	5	17. Blame myself for being too emotional about the situation.
1	2	3	4	5	18. Go out for a snack or meal.
1	2	3	4	5	19. Become very upset.
1	2	3	4	5	20. Buy myself something.
1	2	3	4	5	21. Determine a course of action and follow it.
1	2	3	4	5	22. Blame myself for not knowing what to do.
1	2	3	4	5	23. Go to a party.
1	2	3	4	5	24. Work to understand the situation.
1	2	3	4	5	25. "Freeze" and don't know what to do.
1	2	3	4	5	26. Take corrective action immediately.
1	2	3	4	5	27. Think about the event and learn from mistakes.
1	2	3	4	5	28. Wish that I could change what happened or how I felt.
1	2	3	4	5	29. Visit a friend.
1	2	3	4	5	30. Worry about what I am going to do.
1	2	3	4	5	31. Spend time with a special person.
1	2	3	4	5	32. Go for a walk.
1	2	3	4	5	33. Tell myself that it will never happen again.
1	2	3	4	5	34. Focus on my general inadequacies.
1	2	3	4	5	35. Talk to someone whose advice I value.
1	2	3	4	5	36. Analyse the situation before reacting.
1	2	3	4	5	37. Phone a friend.
1	2	3	4	5	38. Get angry.
1	2	3	4	5	39. Adjust my priorities.
1	2	3	4	5	40. See a movie.
1	2	3	4	5	41. Get control of the situation.
1	2	3	4	5	42. Make an extra effort to get things done.
1	2	3	4	5	43. Come up with several solutions to the problem.
1	2	3	4	5	44. Take time off and get away from the situation.
1	2	3	4	5	45. Take it out on other people.
1	2	3	4	5	46. Use the situation to prove that I can do it.
1	2	3	4	5	47. Try to be organised so I can be on top of situation.
1	2	3	4	5	48. Watch TV.

SCL-90-R:
12-item Somatisation subscale, 13-item Depression Subscale,
10-item Anxiety subscale: Derogatis (1983)

Below is a list of problems some people have. Please read each one carefully, and circle the number that best describes **HOW MUCH THAT EACH PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY**. Circle only one number for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Please turn the page to complete the survey: there are 35 items.

How much were you distressed by:	Not at all	A Little Bit	Moderately	Quite a Bit	Extremely
1. Headaches	0	1	2	3	4
2. Nervousness or shakiness inside	0	1	2	3	4
3. Faintness or dizziness	0	1	2	3	4
4. Loss of sexual interest or pleasure	0	1	2	3	4
5. Pains in heart or chest	0	1	2	3	4
6. Feeling low in energy or slowed down	0	1	2	3	4
7. Thoughts of ending your life.	0	1	2	3	4
8. Trembling	0	1	2	3	4
9. Crying easily	0	1	2	3	4
10. Feelings of being trapped or caught	0	1	2	3	4
11. Suddenly scared for no reason	0	1	2	3	4
12. Blaming yourself for no reason	0	1	2	3	4
13. Pains in lower back	0	1	2	3	4
14. Feeling lonely	0	1	2	3	4
15. Feeling blue	0	1	2	3	4
16. Worrying too much about things	0	1	2	3	4
17. Feeling no interest in things	0	1	2	3	4
18. Feeling fearful	0	1	2	3	4
19. Heart pounding or racing	0	1	2	3	4
20. Nausea or upset stomach	0	1	2	3	4
21. Soreness of your muscles	0	1	2	3	4
22. Trouble getting your breath	0	1	2	3	4
23. Hot or cold spells	0	1	2	3	4
24. Numbness or tingling in parts of your body	0	1	2	3	4
25. A lump in your throat	0	1	2	3	4
26. Feeling hopeless about the future	0	1	2	3	4
27. Feeling weak in parts of your body	0	1	2	3	4
28. Feeling tense or all keyed up	0	1	2	3	4
29. Heavy feelings in your arms or legs	0	1	2	3	4
30. Feeling everything is an effort	0	1	2	3	4
31. Spells of terror or panic	0	1	2	3	4
32. Feeling so restless, you couldn't sit still	0	1	2	3	4
33. Feelings of worthlessness	0	1	2	3	4
34. The feeling that something bad is going to happen to you	0	1	2	3	4
35. Thoughts and images of a frightening nature	0	1	2	3	4

Appendix B1: Mixed Messages about Achievement from Family

Communalities

	Initial	Extraction
MMAS1	225	179
MMAS2	350	325
MMAS3	371	319
MMAS4	503	500
MMAS5	687	664
MMAS6	653	626
MMAS7	730	722
MMAS8	606	828
MMAS9	718	712
MMAS10	556	472
MMAS11(R)	400	363
MMAS12	664	669
MMA S13	236	222
MMAS14	209	170
MMAS15	425	332
MMAS16	710	723
MMAS17	632	602

Extraction Method Principal Axis Factoring

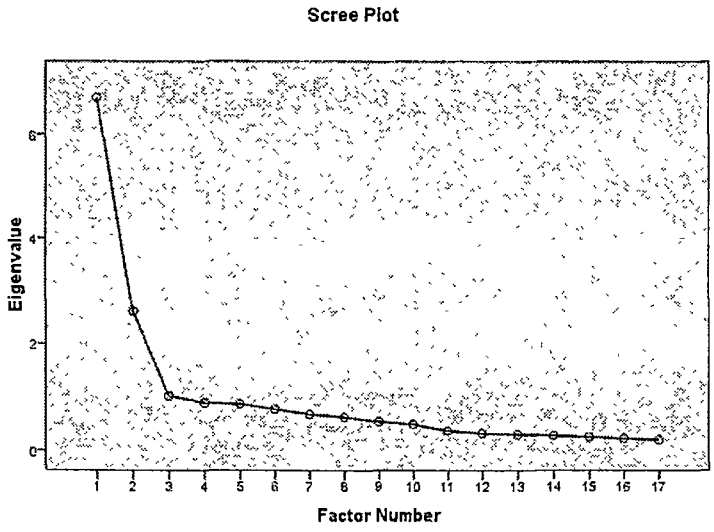
Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings [a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6 708	39 448	39 448	6 294	37 024	37 024	6 289
2	2 608	15 327	54 775	2 134	12 551	49 576	2 140
3	1 016	5 974	60 749				
4	885	5 206	65 955				
5	864	5 083	71.038				
6	768	4 504	75 542				
7	669	3 935	79 476				
8	617	3 627	83 103				
9	530	3 117	86 221				
10	479	2 818	89 038				
11	358	2 106	91 145				
12	309	1 818	92 962				
13	290	1 706	94 669				
14	268	1 577	96 246				
15	241	1 420	97 666				
16	210	1 234	98 900				
17	187	1 100	100 000				

Extraction Method Principal Axis Factoring

a When factors are correlate d, sums of squared loadings cannot be added to obtain a total variance

Appendix B1: Mixed Messages about Achievement from Family



Factor Matrix

	Factor	
	1	2
MMAS1	413	092
MMAS2	- 272	501
MMAS3	537	- 173
MMAS4	111	698
MMAS5	814	- 036
MMAS6	777	- 151
MMAS7	850	010
MMAS8	027	810
MMAS9	843	036
MMAS10	686	026
MMAS11(R)	- 342	498
MMAS12	818	- 015
MMA S13	385	272
MMAS14	124	393
MMAS15	568	110
MMAS16	846	088
MMAS17	770	092

Extraction Method Principal Axis Factoring

Structure Matrix

	Factor	
	1	2
MMAS1	416	077
MMAS2	- 254	511
MMAS3	531	- 194
MMAS4	136	693
MMAS5	813	- 067
MMAS6	771	- 180
MMAS7	850	- 023
MMAS8	059	908
MMAS9	844	004
MMAS10	687	000
MMAS11(R)	- 324	509
MMAS12	817	- 047
MMA S13	394	257
MMAS14	137	388
MMAS15	569	088
MMAS16	848	056
MMAS17	773	062

Extraction Method Principal Axis Factoring
Rotation Method Oblimin with Kaiser Normalization

Factor Correlation Matrix

Factor	1	2
1	1 000	- 003
2	- 003	1 000

Extraction Method Principal Axis Factoring
Rotation Method Oblimin with Kaiser Normalization

Appendix B2: Clance Impostor Phenomenon Scale

Communalities

	Initial	Extraction
CIPS01	269	150
CIPS02	162	098
CIPS03	412	378
CIPS04	526	487
CIPS05	472	480
CIPS06	586	662
CIPS07	370	364
CIPS08	359	307
CIPS09	594	726
CIPS10	396	414
CIPS11	546	619
CIPS12	430	409
CIPS13	574	645
CIPS14	492	503
CIPS15	649	660
CIPS16	441	405
CIPS17	492	472
CIPS18	530	593
CIPS19	312	339
CIPS20	331	339

Extraction Method Principal Axis Factoring

Item-Total Statistics

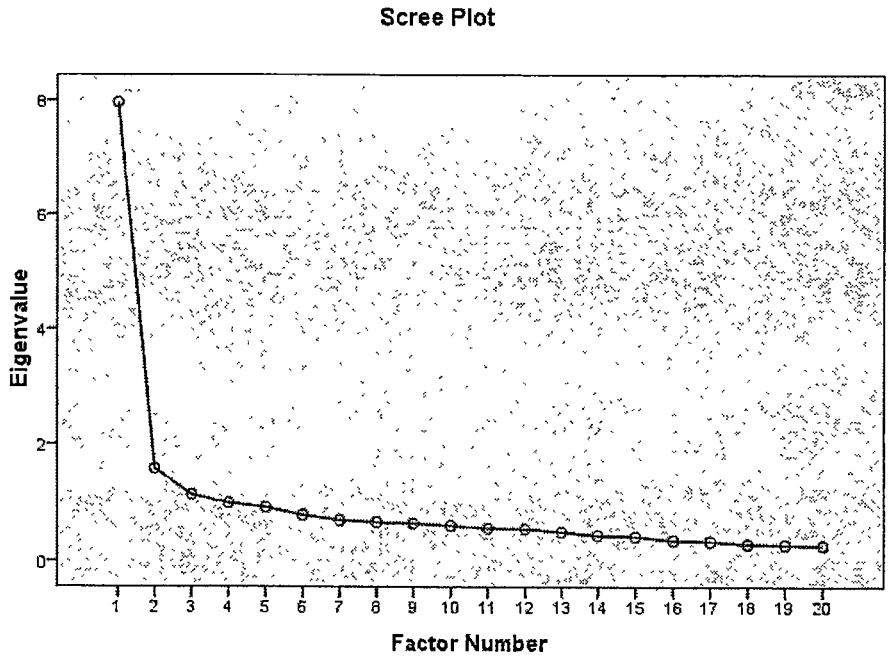
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CIPS01	59 10	219.968	.245	919
CIPS02	59.50	218 534	229	.920
CIPS03	59 75	205.149	.589	.913
CIPS04	59 72	202 440	669	.911
CIPS05	60 49	206 177	.553	913
CIPS06	59 91	198 448	685	910
CIPS07	59 71	203 425	573	913
CIPS08	59 89	207 515	527	.914
CIPS09	60 75	204 785	626	.912
CIPS10	59 66	204.814	576	913
CIPS11	60 36	204 186	593	.913
CIPS12	59 43	204 524	604	912
CIPS13	60.08	200 920	668	911
CIPS14	59 54	204 714	.631	912
CIPS15	59 73	199.938	757	909
CIPS16	59 90	205 143	597	.912
CIPS17	59 19	204 905	623	.912
CIPS18	59.14	206 452	600	912
CIPS19	59 38	210.184	456	916
CIPS20	59 89	207 254	538	.914

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	7 959	39.794	39 794	7 462	37 308	37 308	5.734
2	1.583	7 915	47 710	1 088	5.442	42.751	4 940
3	1 135	5 677	53 387	498	2 490	45 241	5 071
4	.990	4 951	58 338				
5	.919	4 597	62 935				
6	.786	3 930	66 865				
7	.701	3.504	70 369				
8	667	3 336	73 705				
9	.647	3 236	76 941				
10	.609	3 045	79 986				
11	.562	2 808	82 794				
12	.549	2 743	85 536				
13	.499	2 493	88 029				
14	439	2 195	90 225				
15	.420	2 101	92 326				
16	357	1 785	94 111				
17	.340	1 702	95 812				
18	293	1 467	97 279				
19	.279	1 394	98 673				
20	265	1 327	100 000				

Extraction Method: Principal Axis Factoring.

Appendix B2: Clance Impostor Phenomenon Scale



Factor Matrix

	Factor		
	1	2	3
CIPS01	255	292	009
CIPS02	231	- 078	197
CIPS03	615	- 005	- 014
CIPS04	698	.011	015
CIPS05	580	-.376	- 033
CIPS06	727	-.178	.319
CIPS07	596	- 071	- 055
CIPS08	543	- 105	- 016
CIPS09	679	- 460	-.232
CIPS10	601	143	- 179
CIPS11	638	- 380	- 259
CIPS12	627	090	087
CIPS13	712	- 156	337
CIPS14	658	253	076
CIPS15	796	.159	- 016
CIPS16	620	125	- 075
CIPS17	657	194	- 056
CIPS18	642	418	- 082
CIPS19	479	286	- 167
CIPS20	556	014	170

Extraction Method Principal Axis Factoring

Pattern Matrix

	Factor		
	1	2	3
CIPS01	421	155	020
CIPS02	- 036	016	.339
CIPS03	323	-.244	183
CIPS04	370	- 238	242
CIPS05	- 059	-.555	243
CIPS06	074	- 148	677
CIPS07	262	- 327	144
CIPS08	185	-.303	.183
CIPS09	- 012	- 828	050
CIPS10	528	- 256	- 063
CIPS11	057	- 770	-.017
CIPS12	383	- 085	289
CIPS13	082	- 109	689
CIPS14	567	029	244
CIPS15	581	-.178	.198
CIPS16	479	- 190	076
CIPS17	559	-.131	095
CIPS18	786	039	000
CIPS19	603	-.081	- 124
CIPS20	237	- 052	387

Extraction Method Principal Axis Factoring
Rotation Method Oblimin with Kaiser Normalization.

Appendix B2: Clance Impostor Phenomenon Scale

Structure Matrix

	Factor		
	1	2	3
CIPS01	364	- 040	152
CIPS02	.134	- 161	312
CIPS03	525	- 488	490
CIPS04	600	- 536	570
CIPS05	310	- 667	527
CIPS06	492	- 564	800
CIPS07	480	- 523	466
CIPS08	413	- 487	451
CIPS09	376	- 851	513
CIPS10	607	- 451	358
CIPS11	384	- 785	449
CIPS12	571	- 415	537
CIPS13	489	-.535	.793
CIPS14	681	- 356	523
CIPS15	763	- 544	603
CIPS16	602	- 442	434
CIPS17	666	- 428	461
CIPS18	769	- 304	389
CIPS19	574	- 274	237
CIPS20	.462	- 375	541

Extraction Method Principal Axis Factoring
Rotation Method Oblimin with Kaiser Normalization

Factor Correlation Matrix

Factor	1	2	3
1	1 000	- 436	522
2	-.436	1 000	- 567
3	522	-.567	1 000

ExtractionMethod: Principal Axis Factoring.
Rotation Method Oblimin with Kaiser Normalization.

Inter-Item Correlation Matrix

	CIPS 01	CIPS 02	CIPS 03	CIPS 04	CIPS 05	CIPS 06	CIPS 07	CIPS 08	CIPS 09	CIPS 10	CIPS 11	CIPS 12	CIPS 13	CIPS 14	CIPS 15	CIPS 16	CIPS 17	CIPS 18	CIPS 19
CIPS02	180																		
CIPS03	159	110																	
CIPS04	287	116	479																
CIPS05	058	258	318	404															
CIPS06	149	220	496	548	483														
CIPS07	057	120	359	385	377	440													
CIPS08	076	188	371	333	337	352	394												
CIPS09	051	105	440	496	559	518	448	411											
CIPS10	178	102	378	370	343	353	351	315	358										
CIPS11	081	142	388	432	575	421	383	384	676	369									
CIPS12	169	140	336	464	294	431	419	456	330	379	340								
CIPS13	043	242	429	475	438	671	392	369	474	351	433	472							
CIPS14	343	162	421	421	317	441	335	321	303	428	344	414	462						
CIPS15	271	112	507	631	370	554	421	365	490	478	482	515	571	591					
CIPS16	100	164	302	414	269	388	401	405	373	487	343	382	415	433	502				
CIPS17	140	090	439	465	280	415	410	329	388	390	341	420	458	436	555	440			
CIPS18	289	070	376	416	227	360	365	293	257	430	292	426	370	531	579	430	605		
CIPS19	259	063	309	320	217	255	303	183	220	424	217	300	233	341	402	389	354	410	
CIPS20	122	198	286	366	341	454	347	308	343	315	282	393	438	407	391	361	343	368	270

Appendix B3: Factor and Structure Matrix of Clance Impostor Phenomenon Scale

Factor Matrix

	Factor	
	1	2
CIPS01	256	.295
CIPS02	.230	- 081
CIPS03	.616	-.008
CIPS04	.700	007
CIPS05	.582	- 393
CIPS06	.716	-.168
CIPS07	.597	- 080
CIPS08	.545	-.115
CIPS09	.672	-.438
CIPS10	.600	.133
CIPS11	.632	- 361
CIPS12	.628	.083
CIPS13	.700	-.146
CIPS14	.660	.251
CIPS15	.798	158
CIPS16	621	.118
CIPS17	658	192
CIPS18	.643	.418
CIPS19	.478	276
CIPS20	.555	.007

Structure Matrix

	Factor	
	1	2
CIPS01	.113	.374
CIPS02	243	150
CIPS03	.566	.514
CIPS04	.635	.593
CIPS05	.692	.278
CIPS06	.722	.512
CIPS07	.578	.460
CIPS08	.544	.397
CIPS09	.792	330
CIPS10	.493	.576
CIPS11	.724	.337
CIPS12	.539	.573
CIPS13	.699	.511
CIPS14	.499	.691
CIPS15	.664	.757
CIPS16	.518	.586
CIPS17	.522	.658
CIPS18	.416	.767
CIPS19	324	.552
CIPS20	.504	.472

Appendix B4: Characteristics of the Scales

	Minimum	Maximum	Mean	Std. Deviation
MMF	10.00	69.00	31.8418	14.08887
FAV	6.00	35.00	23.5424	5.72353
CIPS	22.00	88.00	55.6977	14.54724
SOP	24.00	105.00	65.2768	16.90641
OOP	22.00	85.00	52.7712	11.48474
SPP	19.00	84.00	48.0876	13.92292
Task-Focussed	27.00	79.00	57.2068	9.91754
Emotion-Focussed	17.00	77.00	50.6102	12.06500
Distraction	8.00	40.00	23.1045	6.29518
Social Diversion	5.00	25.00	16.7881	4.77040
Somatisation	.00	46.00	10.0367	8.47769
Anxiety	.00	39.00	8.9980	8.16964
Depression	.00	50.00	16.2599	11.06818